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THE SOCIAL TREND IN MEDICINE*

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Before the war, a new era made itself known in many ways; but medicine, especially in the United States, either held aloof or, at any rate, did not actively face the facts. Many things included under the term socialization affected medical practice as well as medical study. In England, several years before the war, the new course affected the profession abruptly and without preparation in the form of the insurance laws. Because of the strong similarity with political tendencies in this country we should have taken more interest in that movement in Great Britain. I do not intend to enlarge on details now, but mention the incident as an illustration. As the editors of the *Revue de médecine* remark in announcing some changes in the plan of that sound and representative journal, "medicine is becoming less academic and speculative, but more physiologic and social."

INDIVIDUALISM AND DEMOCRACY

Many foreigners, including the most penetrating as well as the most sympathetic critics of our political life, have emphasized the great danger of our satisfaction with a low level of culture; while those who are not partial to democracy in general look on it as a necessary by-product, and one that might serve as a warning to other nations less advanced in personal liberty. Those of us who are believers in democracy and those who wish to excel in any way, especially in the so-called practical lines leading to financial success, value the boundless opportunity given to individualism in America and have long refused to heed the pessimistic assertions of those who see in these opposing but related tendencies — individualism and democracy —a serious menace to the national life.

The satisfaction with unbridled individualism has much to do with some of the things most shocking to an impartial observer, whether exchange professor or recent proletarian immigrant. In no other country called civilized is life held so cheaply, as shown by the indifference to homicide in all forms and to accidents of all kinds. Murderers go uncaught or, if caught, unpunished; lynchers, equally lawless, never give a thought to punishment, because they know it will not be meted out. Homicide is not the only neglected wrong. Thievery of all grades, be it that of the simple footpad or the embezzler of bank funds, of the payroll cash or automobile bandit, is equally undetected and unpunished. Life and property are not everything. Grade crossings of railroads, even in the most fashionable streets of large cities, resulting in many accidents, are but the logical companion-pieces to roads, such as no other civilized land has had since the end of the eighteenth century. It is characteristic of our fondness for exaggeration and mockery that we give to the worst of these the name of trails and of highways. Add to these dangers the smoke nuisance in almost all cities, the dirty streets and dirtier alleys, the unnecessary and wholly unprotested noise of the streets, which affect health and efficiency, and we have an outward form of civilization that must shock all contemporary visitors or future historians.

The practice of lynching seems to contradict the individualistic tendency so characteristic of the American people, but in fact it does not. The individualist is a strong and aggressive character who forces a way to success in spite of obstacles. There are, however, many persons who are too indolent and too lacking in initiative to become conspicuous; with little business of their own they have too much time to devote to that of others. From this and their suggestibility to evil, they form the mobs that, like some other low creatures, are always ready for mischief. The inertness of the officials whose business it is to apprehend malefactors is explained by the fact that such officials are chosen largely from the very element concerned in the violation of law or of peace. Even the higher officials, prosecuting officers and judges have the spirit of the mob rather than that of the guardians of the law and of the dispensers of justice. This explains why a policeman who actually sees a misdemeanor or felony will usually do nothing unless some bystander, especially the victim, promises to prosecute. It explains why prosecuting attorneys, the name illustrating the etymologic law "lucus a non lucendo," do not bring to justice those who ostentatiously violate medical practice laws, liquor laws, misbranding laws and many others. It makes clear why even federal officials, who have the function of enforcing food laws, try to base their legal actions on the testimony of physicians, dealing with more or less disputed chemical and physiologic questions, rather than on the plain legal phases of the case. Of course, another explanation is often given for all these derelictions of duty—dishonesty or graft—but that is not necessarily true. The test of war has shown that here, as in other countries, individualism is not essentially bad. On the contrary, the good which it accomplishes far outweighs the bad, and the latter can be kept down by education and the proper social adjustment. The passive, suggestible

* Read before the biennial international convention of Nu Sigma Nu, New York, Nov. 29, 1919.

spirit is always bad. In a weak state it makes slackers; in a strong one, it may produce efficiency, but is then a source of danger to its own country, as well as to others. For it, too, education is the remedy, but it must be a vigorous and definite education.

OUR LACK OF COOPERATION

One of the most glaring examples of lack of cooperation is shown in the state laws for medical licensure, or, in short, the medical practice laws. These laws have for their sole object the furnishing of well qualified physicians, and the exclusion of others. After hard work for nearly half a century, and less strenuous efforts for a longer time, the laws of most states act chiefly to prevent physicians from moving from one state to another, which, for climatic or other personal reason, one might prefer. In few of the states are the examinations so superior to others that the tests vary essentially from those in others. The citizenry does not care whether a physician has come from another state any more than in the case of a preacher, engineer or trolley driver. The quasi-excuse for such a state of affairs is that our form of government, the police power in relation to the states, etc., obliges us to submit to this absurd condition, which affects also such other details as marriage and divorce, taxation, etc. So far from being a valid excuse, this is only a confession of legal and political incapacity. It illustrates another fact in the ease with which we make laws, although every one knows that whereas some of them—or some details, like the practice laws —are observed in certain respects as if gospel, others are dead letters from the time they receive the governor's signature! so much so, that hundreds are unknown even to those who have the duties of making, signing and enforcing them. As Kipling says of the American spirit:

> The cynic devil in his blood
> That bids him flout the law he makes;
> That bids him make the law he flouts.

The law officer, when accused of inertia, throws out a smoke screen by asking for still more laws.

Just as the country was getting into one of its frequent periods of financial and industrial depression, the war came; and although that form of intellectual dishonesty that calls itself idealism tried to keep us out, it was obvious from the beginning that we should have to fight for everything we had gained — life, wealth and honor, probably for civilization itself — with the certainty of losing something.

When war came, the weaknesses of the national fabric soon began to be disclosed. Notwithstanding our strong individualism and energy, our skill, ingenuity and industrial organization, the low average ability and lack of cooperation were seriously felt in many lines, and especially in those relating to the national security and the continuance of our traditional policies. And this proved to be true not only of such large matters as universal service and taking part in European politics, but in the more selfish questions of freedom of opinion and speech, of the use of spies and informers, of personal liberty in regard to wine and beer, and many questions of taste rather than of ethics or laws.

In spite of all these drawbacks we played an active part in the war, and one of signal honor in hundreds of ways. The experiences of the epoch can hardly be evaluated yet, but some of the lessons are already evident for those who wish to consider them.

PROBLEMS OF THE TIMES

At the beginning, when bodies and dollars were being poured out, there was the same pathetic confidence in a coming intellectual and moral renaissance as is doubtlessly always manifested when a nation goes to war. It was so in a less glorious war still within the memory of most people now living — the Spanish-American War. There was a general elevation of soul, even on the part of those who objected to the manner of beginning war, with high hopes of a mighty advance in all directions. It was assumed that with the courage of those who ventured all, with the self-sacrifice of the wives and families of the fighting men, a real and permanent exaltation above previous levels would take place in intelligence, in politics, in business and in public service.

Doubtless in individual cases there was a new birth or a moral exaltation that will continue; but in general we have fallen back into the old ruts, while some new traits, brought out or accentuated by the exertions or readjustments of the effort to win, have shown themselves to be even more threatening than the schemes of kaiser or German general staff.

One of the outstanding phenomena of the struggle was the important part played by experts, by men and women of scientific training, in medicine as much as anywhere. Medical men wholly prevented many of the plagues that in former wars decimated armies and devastated civil populations. They saved countless limbs that would have been amputated in previous wars; they restored minds unhinged by physical and mental shocks. The destructive pandemic of influenza that began before the end of the war and lasted long after hostilities ceased, may seem to lessen the credit due the medical service. This really emphasizes the value of medical science in the other cases mentioned. The misinformed sometimes assert that lessening of infectious disease in recent years is due to the advance of general and personal hygiene, but the truth is that each infection requires special measures, which can be taken only when the vital peculiarities of the infecting germ are known. Influenza in this respect is far behind many other diseases, such as diphtheria, smallpox, tetanus and typhoid fever, and it will probably require the labors of many investigators, working from various angles, to solve the problems of influenza and enable us to check its spread and danger. That the difficulties will be solved no one can doubt, and as in other cases, the necessary measures, no matter how costly, will be cheap in the end.

During the war, the resources of trained minds were so striking, the practical results in hundreds of directions were so real and so important, not only in medicine, but in every scientific line, physics, chemistry, physiology, bacteriology and serology, that one might have expected that those who accomplished such results would be hailed as the most precious and indispensable members of the commonwealth, and that they would be showered with everything necessary for their future work and material comfort.

But again history repeated itself: The men who accomplished the greatest destruction of life get all the glory and all the rewards possible, the physicists, physiologists, and the like return to their meager salaries and their poorly supported work. On all sides, while the struggle was on, it was asserted that since education had shown its value (with the imputation that it had not in dull times of peace) it would be easy to get the requisite financial means. That art and

science would no longer have to go after bread seemed almost an axiom.

Well, the war is over—for some purposes, such as selling beer, if not for others, such as digging coal—and what is the result? A few rare souls, as I said before, retain the exaltation they felt at first. The mass of the citizenry went back to the same old selfishness, the same indolence, the same indifference, the same carelessness. Many have gone backward physically and mentally, and show an intense ennui, a definite relaxation of physical and moral fiber. We see general lack of thrift and a widespread extravagance coupled with the desire for easy money, whether by raising to an exorbitant height the price of labor and commodities, or by the simpler methods of expropriation and printing of fiat money. The method of raising prices of labor or goods has been so successful in America that the Bolshevists of Russia must regret the danger and bloodshed they risked when they followed the cruder method.

We are at present too much engaged in keeping our heads above water to know how serious the danger is. When Germany began her gamble of Weltmacht oder Niedergang, it was clear that the downfall threatened, not only the reckless adventurers who struck the blow, but civilization itself. Nor must we think that the results still to come can be no worse than those that followed the break-up of the Roman Empire. Just as civilization is so much more complex in almost all lands, and populations are so much greater all over the world with a resultant accentuation of the struggle for existence, and just as the means of destroying life and property are so much more effective than before, so may the shock, the destruction and the period necessary for recovery be much greater than ever before.

Very instructive are the intellectual camouflages that have appeared but have excited little comment. When the draft began and the records as to the large number of illiterates were made public, much surprise was expressed. Yet the facts and figures were accessible to everybody and had frequently been set forth by economists and educators. Nor is it strange that in the year since the armistice was signed no serious effort has been made toward bringing the literacy, even among native Americans, up to the level of civilized Europe.

Before the war the United States was fondly spoken of as the "melting pot," and "Uncle Sam" was figured as a benign pedagog illuminating the soul of the benighted foreigners who throng to our shores. Since we found that the "melting pot" does not transmute the immigrant generation, we have no better way to improve it than by deporting it, without giving it time to learn English, or without getting the aid of the several hundred foreign language papers in setting forth our ideals, aims and laws. Much money was spent in propaganda to make bad Germans worse in their own country; very little to make Americans better in ours.

The great increase in the number of students at colleges and universities may be looked on as evidence of a desire for learning, but I am not at all certain that this is so. Large classes have been observed before, corresponding with times of financial stringency. Many people, and especially the families of salaried employees, find themselves now in that condition, and may furnish part of the number; others may be in affluence, and enter institutions of learning in order to get what social prestige may accrue from that association. Among the congratulatory notes in the press about large classes, little appears in regard to another side. Before the war, the colleges and universities in many instances had insufficient teaching forces. With the increased cost of living many teachers have gone into other vocations, and their places have often been filled by less capable persons. The change of vocation is interesting. The war not only emphasized the importance of the expert, but it also showed how men of talent can rapidly master new subjects and make themselves, as it were, experts in other, and sometimes unrelated, lines. Not only may an economist become a successful banker; a physician, a zoologist or a modern language instructor may become a leader or an administrator in some industrial line. Universities see the danger and are making praiseworthy efforts to increase funds for salaries; but in the meantime the large classes and overworked and underpaid teachers must get on as best they may.

Since the war, a curious lowering of entrance requirements has threatened university scholarship. For some years adherents have been gained for the belief that education means not so much mental discipline as the cultivation of branches that are not disagreeable to those who take them. So now it is proposed that, in place of giving the matriculant an opportunity of showing his acquaintance with Cicero and Plato, with geometry and history, he must be familiar with even lesser stars in the "movie" constellations, and be able to tell whether a certain low priced motor car is made in Detroit, Flint or Toledo. I have seen the possible results of this foreshadowed in my daily work. In speaking before certain kinds of patients I have long had the habit of using terms like "psyche" and "cor" when inquiring about functions of brain and heart, frequent objects of morbid introspection to such patients. In the last few years I find that either no one in the class, with two years of college work, recognizes the word, or if he does he is not willing to embarrass his classmates with an exhibition of such antiquated mental lumber.

So we are passing through an era in which many traditions, beliefs and customs are in the scrap-heap or the melting pot. Those that survive must be treated by people, many of whom have had their mental faculties exhausted or unbalanced by the fatigues and shocks of the long struggle. Reconstruction will be slow at best, and can be successful only if the whole subject is worked at with all possible knowledge. A century and a quarter ago, Lavoisier, one of the greatest geniuses of France, who had given many proofs of the practical value of the scientific mind, was condemned to the guillotine, with no good reason, according to sober views. His reprieve was asked for on account of his scientific eminence, but it was rejected on the ground that the republic "had no more need of savants." Let us be sure that in our time the same cannot be said, or even subconsciously supposed.

There are some reasons for an optimistic view in this respect. One is the continuation of the work of the National Research Council, one of the most valuable auxiliaries of the government produced by the stress of war. With Henry A. Christian at the head of the medical division we may anticipate solid results. Another is the reconstruction work carried out under the direction of the Public Health Service. There can be little doubt that a demonstration of the practical value of this work on a large scale will impress every one that provision must be made for the wrecks pro-

duced by industrial accidents—wrecks very often quite as much the result of devotion to duty as those produced by war. With such examples we can hope it will soon be impossible to say of Congress, as Edward Everett wrote to William Beaumont in 1834: "The great difficulty lies in the theoretical objection to the appropriation by Congress of money for any scientific or philanthropic purpose whatever."

PROBLEMS CONFRONTING PHYSICIANS

We as physicians are concerned in innumerable social problems, along with other intellectual workers and handicraftsmen. We also have our special problems, depending on the close relation of medical advances with general industrial and social questions. Some of these arise from the new conviction of the need of cooperation in many lines of activity, the struggle for the extension in every direction of trades unionism, the tendency to strike in various forms and especially on a large scale. Others arise from the many manifestations of conscious and unconscious socialism already present, with the promise of still more serious problems should the radical movement reach the stages reported, incorrectly in many respects and imperfectly no doubt in all, in Russia and Hungary. The fact that a strike may assume the proportion of a monopoly has recently been shown, but has barely been mentioned by those who should do so.

Without wishing or intending to pose as an oracle, let me touch on a few of the problems:

Health insurance, with its reliance on the medical profession for the most important part of the work, has been widely discussed and warmly advocated, especially by nonmedical people. On this question there is an enormous experience in other countries, and it would be well if we insist on a study of such experiences and an equally thorough study of the differences in conditions in those countries as compared to our own, before we encourage such a project or take part in making laws concerning it.

The little work of David McKail and William Jones, recently published by the Fabian Society, illustrates some of the weak points of such plans. As a review in the London *Nation* (Oct. 25, 1919) shows, the English insurance act "was forced on the medical profession without its acquiescence and without its voluntary help; the act was brought to birth amid a mass of bargaining and trickery, the spirit of which still hangs about its administration (after eight years)." These comments remind one of the conditions under which even the most meritorious changes of law are brought about, and recall the dishonesty associated with the passing and application of the Lever act. The British reviewer goes on to point out the lack of facilities, including hospital care, expert opinion and surgical operations, under the operation of the insurance act. We can see how, with our more scattered population, the conditions in our country are even more difficult than in Scotland. The crux of the argument for the new system is based on the cost of operation, while the most salient point in this depends on the elimination of motor cars and the reduction of physicians' salaries to half their present income. In other words, under socialization, as under the old system, the physician's welfare is the last consideration. The proposal illustrates the inconsistency as well as the lack of humor of soviets. Their cry is mines for miners, railroads for railroad unions; why not patients and pay for doctors?

The socialization of medical and sanitary measures has already made some headway in the United States. I think it may be said that this consists essentially in having all public medical and sanitary affairs in the hands of well-informed and capable men, at sufficient salaries, with adequate staffs, wholly free from the caprice or ignorance of politicians. As such matters are almost wholly neglected in most parts of the country, it should be possible to follow from the beginning a well-tried plan, such as was demonstrated practicable by our government in Panama, as well as in other places. Seeing how badly conducted are many public services, and how much harm could befall the country if the management of sanitation were as faulty as some other branches, we can only hope that a higher standard will be set before we embark on any new hygienic efforts.

The difficulty of making the public realize the economy of prevention of disease has in the past been the chief reason for general neglect of hygienic efforts, and for imperfect work in almost all parts of the country. We were not accustomed to consider the cost of foes like infection and filth, and the cost of sanitary officers, detention hospitals and compulsory care of dangerous invalids. In the last three years we have, almost without a murmur of protest, paid many times the former taxes in order to retain our moral and political freedom, and we all know that the price, extravagance included, was justified. To state it in another way: We spent many times more to kill or even disable, as by gas, a single enemy soldier, than we spend to keep our own population free from communicable disease; just as we spent many times more to maintain roads for ammunition than we ever have to facilitate bringing farm products to cities, or to get the country doctor to his patients. For the cost of a battleship we could eradicate malaria and typhoid fever from many localities where they still flourish. For sums that to a secretary of war would seem trifling, we could make it possible for every tuberculosis patient to get necessary treatment in any stage of the disease. For the price of a single battle we could see to the health of every schoolchild, and train all those in schools and colleges in proper hygienic lines. The cost of sanitation of work places would be a bagatelle. Of course, this could not be done under the old pork-barrel method of administration, or even according to the methods used in some lines, like aviation, in the war. But with a corps of experts, that could be formed now better than ever before, and a fund properly budgeted and honestly administered, a better return could be made than on any money ever spent by the country.

TRADE UNIONS AND MEDICINE

For a long time now the medical profession of the United States has been spoken of by some of its critics as a trade union. To be sure it has never adopted any of the methods so characteristic of trade unions in its relation to the rest of the population; and although it has had, for nearly twenty years, a very efficient organization, it has never used its power for any other purpose than some public welfare, and in particular has not attempted to gain financially or politically, either for the organization or for individuals. Under the circumstances it seems that the use of the term reflects as much on the trade unions as on the medical profession.

But the trade union movement is making rapid accretions, and in spite of the short-sightedness of

many leaders of American labor, should be given every opportunity for proper expansion. Teachers in schools and universities have formed unions. From the experience of other countries we may find pressure on physicians also to unionize. Before we do this we should remember that we are not merely craftsmen; we occupy a position comparable rather to that of policemen, firemen or soldiers. Any such allegiance as those exhibited even by the most conservative unions would be wholly at variance with our duties, as understood at all times and in all places by physicians.

When we see, especially, the harm that can be done by unscrupulous, dishonest or overambitious representatives of unions—harm not only to innocent fellow citizens, but to trade unionism itself—we can draw a lesson regarding one danger. There are others. Trade unions too often consider wages the main thing, the quality and quantity of work quite secondary. One can see a danger from this tendency, which may last longer than either the capitalistic or the feudal systems, in the case of teachers' unions. Few teachers are paid enough, but many are paid more than they earn. In the agitation for increased appropriations, I have not seen any recognition of this fact, nor any intention of requiring a higher standard of performance when salaries are made fairly commensurate with comfort. The same danger would threaten if physicians had unions. How rarely in any unionized trade does one see pride in a neat job, or any effort to get it. The controller is keen to detect any detail that might be the sole function of another union, and fines a plasterer, for example, if he knocks in a protruding nail with the handle of his trowel; but both workman and helper may loaf to their heart's content without remonstrance. So let us keep out of unions as long as we can, and if we are forced into them as a result of social evolution, let us try to retain our pride in a good job and remember that ours is a calling in which there is work to do all the time; and time for our own comfort must often be negligible.

But there is already a class struggle going on, and as usual at such a time, it is all the more dangerous because declarations of war have either not been formally made, or if so, they have been concealed by those who fear to face the verdict of contemporaries or posterity. The coal strike is an example of a new method of trades union struggle. Incidentally, it illustrates the mental inertness of the people. As soon as the government took its stand even the most judicious newspapers assumed that the strike was over, though even now the coal situation grows more serious. One is reminded of the courtiers who assured King Canute that the waves receded at the royal command. It would have been better to imitate those, who, when hungry and unable to fill their stomachs, obliterate the void by tightening their belts.

PHYSICIANS AS SERVERS OF HUMANITY

What stand should physicians take in this war? Having the highest example, one can decide without trying to go into the merits of the case. I should say physicians should take the same stand they all took in 1914, and some even after that time, in international war. They should serve humanity wherever possible. But this, of course, is when they act as individuals, so that, to take a very concrete example, in case of a strike affecting the lives and health of the community, as of miners, railroad hands or dealers in food, they should apply the counterstrike, as members of corporate bodies. If a hospital cannot get coal or food, then no one in the unions concerned should be admitted to the care of such a hospital. To do other than this would be a crime against the helpless, though the individual physician would be free to exercise his care wherever he could, and should help even those who call themselves his class enemies, when they are sick or wounded.

To do this may seem to require more charity than the twentieth century can afford. I do not think so. Let us hope, however, that instead of having to devote our talents to such work, we may soon enter another era, in which the only strife will be that for excellence. *Punch* not long since had a cartoon in which a great politician was posed as Hamlet, and quoting the bitter lines: "The time is out of joint;—O, cursed spite, that ever I was born to set it right!" This was a reflection of the soul of Hamlet, but other sentiments are more in keeping with the present time.

Class struggles of the most brutal kinds are not new. From time to time the so-called peasant wars sprang up as an expression of injustice, but the greatest insurrection before our time, the French Revolution, showed that after the main object was achieved communism and anarchy were not really profitable. Some centuries ago, the robber barons of Hohenzollern used to pillage their proletarian or bourgeois neighbors, and later successfully despoiled their neighbor princes, kings and emperors. No one now cares where they are. Their successful days seemed long and were in fact too long; but even if the present chaotic times last as long as the period of divine right of kings, it will be short as compared with biologic processes.

We have seen the dream of the Victorian poet realized in its most impossible part—we have seen the "airy navies grappling in the central blue." Why not hope that some other parts will be realized, that the war drums will throb no longer.

EFFECTS OF TYPHOID FEVER AND TYPHOID VACCINE ON PULMONARY TUBERCULOSIS *

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Many of the older physicians and writers viewed the coexistence of pulmonary tuberculosis and typhoid fever as offering a grave prognosis; and as there are undoubtedly a large number of physicians who at present have the same views, a report of our experience gained during an epidemic of typhoid fever at this institution during the months of August and September, 1919, should be of value. That the diseases may coexist has been recognized for a long time; and unquestionably, it not infrequently occurs in private practice, unknown in the majority of instances to the physician, as the patient may have a healed tuberculous lesion of which he is often unaware. It is well known that the symptoms of one disease may closely resemble those of the other, as miliary tuberculosis is often mistaken for typhoid fever, and as pulmonary tuberculosis may begin with symptoms that may simulate the features suggestive of typhoid fever.

* From the State Tuberculosis Sanatorium.

No doubt this complication has occurred in several sanatoriums; but the available literature reveals only one reported epidemic,[1] which took place in the summer of 1917 at Trudeau Sanatorium, Saranac Lake, N. Y. Altogether there were fifteen cases in that series, eleven of which were being treated for pulmonary tuberculosis. The disease proved fatal with two of the patients who had had active tuberculosis prior to the typhoid infection, while the third active case showed no more advancement of pulmonary lesion than otherwise would have occurred. Of the remaining eight, the general condition of three remained unchanged, while in five it was improved.

There were sixteen persons infected during the epidemic at this institution, nine of whom were patients, and two former patients, who were employed as storekeeper and orderly, a foreman of construction, three laborers and a maid. As five of these were outside employees and were nontuberculous, they shall not be considered in this report.

HISTORY OF EPIDEMIC

CASE 1.—Aug. 4, 1919, a patient, D. C. B., who for several weeks had had a low grade temperature, developed a higher temperature than usual.

CASE 2.—One day later, August 5, a patient, F. C. M., who a month before had had an exacerbation of symptoms, had a chill followed by high temperature. This and the preceding patient were at first thought to have developed an acute tuberculosis.

CASE 3.—On the same day, August 5, a patient, I. Q., who had had a previous malaise, also vomited and had a slight rise in temperature.

CASE 4.—August 9, a patient, H. W., had a severe chill, followed by a high temperature. He had a complication of pulmonary tuberculosis and bronchiectasis, and not infrequently, when the lungs did not drain properly, had chills followed by fever.

CASE 5.—One day later, August 10, a patient, J. N. T., vomited and had a high temperature.

CASE 6.—On the same day, August 10, a patient, L. L., had a rise of temperature following a malaise of several days' duration.

CASE 7.—Four days later, August 14, T. D. M., a hospital patient who was having a temperature range of from 97 to 100.4, developed a higher temperature.

CASE 8.—On the same day, August 14, the storekeeper, D. N. R., whose pulmonary lesion was quiescent, had a rise of temperature.

CASE 9.—At the same time, August 14, a patient, S. H. H., who had been having a temperature range between 97.6 and 99.4, developed a higher temperature.

CASE 10.—August 20, L. J. H., a patient, had a moderate rise of temperature.

CASE 11.—Six days later, August 26, R. I. V., an orderly, who had had no contact with the former patients, developed a high temperature.

SOURCE OF INFECTION

Immediately after tentative diagnosis of typhoid fever was made, samples of milk, drinking water, ice, and water from a nearby spring, from which some of the patients had been drinking, were examined to determine the source of infection.

The supply of ice was obtained from a factory, the milk from our own dairy, and drinking water from springs on the mountain side, which at that time were very low, and from the spring to which reference has been made. This spring was located below and to the east of the hospital, and had been in use for several years. As two of the laborers who drank from the spring and not from the water supply in the buildings became ill of typhoid, the spring was at once suspected.

In the meantime the report of the bacteriologist was to the effect that all samples were in excellent condition except water from the spring, which showed the presence of *B. coli*.

This led to an investigation of our sewerage system. The main sewer was located to the south and across a ravine from the spring, but the sewer leading from the north wing of the hospital was located about 50 yards above and was supposed to be cemented and water tight. This part of the system was found to be almost completely obstructed and was opened with great difficulty, indicating that it had been in this condition for some time. On questioning those who had been drinking from this spring, we learned that a peculiar taste—that of creosote—had been noticed in the water for several days, and with one execption, all typhoid patients had been occasionally drinking this water. As we were using a creosote disinfectant in our lavatories in the hospital, it was sufficient proof that our sewage had contaminated the spring and that it was the source of our epidemic. As there were many changes made among the patients on the north wards of the hospital, we were unable to make a thorough investigation for the carrier.

REVIEW OF PATIENTS' PULMONARY TUBERCULOSIS AND TYPHOID FEVER

CASE 1.—D. C. B. (No. 1144), admitted May 8, 1919.

Tuberculosis.—Examination on admission: Chest: Marked dulness to fourth rib, both upper lobes, and to apex of base in back. Râles fairly active apex to base, and to lower angle of scapula back. Râles without cough. Condition far advanced. Sputum, positive. Diazoreaction negative. Temperature, from 98 to 99.4. Patient was substandard, and condition was slowly progressing at the time of the typhoid. Temperature, from 98 to 100. Sputum was positive prior to infection.

Typhoid.—Onset, August 4. Epistaxis. Widal test, positive. Diazoreaction, positive. Few rose spots. Delirium at intervals. Highest temperature, 105. On thirty-seventh day, relapse. Spleen palpable 2 inches below costal margin. Temperature returned to usual level on sixty-fourth day. Severe infection.

CASE 2.—F. C. M. (No. 1140), admitted, May 8, 1919.

Tuberculosis.—Examination on admission: Chest: Right, moderate dulness to fourth rib. Left, slight dulness, apex to third rib; thickened pleura with flatness left base. Right, râles on cough apex to fourth rib. Left, râles, apex to base without cough. Breath sounds very weak at left base. Condition far advanced. Sputum, positive. Diazoreaction, negative. Temperature, from 99.8 to 102.4. Patient was admitted to the hospital, where he remained until June 11. Transferred to cottage and continued to have occasional temperature from 99.2 to 99.4. Condition was slowly progressing at time of typhoid illness. Sputum persisted positive.

Typhoid.—Onset, August 5. Epistaxis. Two severe chills. Widal test, negative (only one examination). Diazoreaction, positive. Delirium at intervals for three days. Highest temperature, 104.4. Severe infection. On forty-eighth day, September 21, moved to his home. Temperature range at time of discharge, from 98 to 102. Two months later, in reply to inquiry, patient stated that his temperature had returned to the usual level and that other symptoms were practically the same as before typhoid.

CASE 3.—I. Q. (No. 1201), admitted, July 15, 1919.

Tuberculosis.—Examination on admission: Chest: Right, slight dulness at apex. Left, slight dulness to second rib.

1. Brown, Lawrason; Heise, F. H.; Petroff, S. A., and Wilson, G. E.: A Study of Effects of Typhoid and Antityphoid Immunization on Pulmonary Tuberculosis, Am. Rev. Tuberc. **11**: 717 (Feb.) 1919.

Left, râles on cough to second rib; expiration prolonged at both apexes. Condition, incipient. Sputum, negative. Diazoreaction, negative. Temperature, normal. Patient had made slight improvement in general condition prior to typhoid infection. Sputum persisted negative.

Typhoid.—Onset, August 5. Severe vomiting. Widal test, positive. Diazoreaction, positive. Highest temperature, 103.2. Temperature fell to normal on thirtieth day. Moderately severe infection.

CASE 4.—H. W. (No. 1113), admitted, April 1, 1919.

Tuberculosis.—Examination on admission: Chest: Right, marked dulness to fifth rib. Left, slight dulness at apex. Right, râles without cough, apex to base. Left, râles on cough, apex to base front, and to lower angle of scapula back. Condition, far advanced pulmonary tuberculosis and bronchiectasis. Sputum, negative. Diazoreaction, negative. Temperature, normal. Patient had occasional exacerbations with chills and rise of temperature, but general condition had shown slight improvement at time of his typhoid illness. Sputum had persisted negative.

Typhoid.—Onset, August 9. Widal test, positive. Diazoreaction, positive. During first three weeks of illness had nine pulmonary hemorrhages, averaging 2 ounces. Highest temperature, 104.4. Temperature returned to normal thirty-seventh day. Severe infection.

CASE 5.—J. N. T. (No. 1047), admitted June 6, 1913.

Tuberculosis.—Readmitted, Nov. 18, 1918. Examination on admission: Chest: Right, marked dulness to fourth rib. Left, slight dulness to second. Right, râles to fourth rib on cough and to lower border of scapula. Left, râles on cough to second rib. Condition, moderately advanced. Sputum, positive. Diazoreaction, negative. Temperature, from 98 to 100. Patient was admitted to hospital, and after prolonged rest was moved to cottage. Discharged, June, 1916, as quiescent. November, 1918, was readmitted to hospital. Had severe hemoptysis. Improved and was moved to cottage in June, where he had onset of typhoid infection. Sputum persisted positive.

Typhoid.—Onset, August 10. Profuse epistaxis. Widal test, positive. Diazoreaction, positive. Few rose spots. Spleen, palpable under costal margin. Had two attacks of hemoptysis, following which, both lungs became congested. Delirium for three days and at intervals for two more. Small amount of blood in involuntary stool on twentieth day. Highest temperature, 105. Temperature returned to normal on thirty-ninth day. Severe infection.

CASE 6.—L. L. (No. 1216), admitted, July 31, 1919.

Tuberculosis.—Examination on admission: Chest: Right, slight dulness to second rib. Left, slight dulness at apex. Right, râles on cough at second rib. Left, râles on cough at apex. Condition, incipient. Sputum, positive. Diazoreaction, negative. Temperature, normal. Patient's general condition had slightly improved at time of typhoid illness. Sputum persisted positive.

Typhoid.—Onset, August 15. Widal test, positive. Diazoreaction, positive. Palpable spleen. Delirium for twenty-four hours. Highest temperature, 105. Temperature returned to normal on thirty-fourth day. Severe infection.

CASE 7.—T. D. M. (No. 951), admitted, June 4, 1918.

Tuberculosis.—Examination on admission: Chest: Right, moderate dulness to third rib. Left, slight dulness at apex. Right, râles on cough to fourth rib and to lower third of scapula in back. Left, râles at apex. Condition moderately advanced. Sputum, positive. Diazoreaction, negative. Temperature, normal. Patient had severe hemoptysis in September, 1918, followed by a marked extension of lesion with cavitation in right upper lobe, and since this exacerbation his pulmonary condition has been slowly progressing. Temperature, from 97 to 100.4, and sputum positive, prior to typhoid illness.

Typhoid.—Onset, August 14. Widal test, positive. Diazoreaction, positive. Palpable spleen. Highest temperature, 103. Temperature down to usual level, thirty-ninth day. Moderately severe infection.

CASE 8.—D. N. R., admitted, Sept. 29, 1914.

Tuberculosis.—Examination on admission: Chest: Right, marked dulness to fourth rib. Left, slight dulness at apex. Right, râles apex to base front; apex to lower border of scapula back. Râles on cough. Left, râles on cough to third rib. Condition far advanced. Sputum, positive. Diazoreaction, negative. Temperature, 100 plus. Patient improved and was discharged as quiescent, in June, 1916. Employed as storekeeper at time of typhoid fever. Sputum persisted as positive.

Typhoid.—Onset, August 14. Widal test, positive. Diazoreaction, positive. Highest temperature, 102.4. Temperature fell to normal, thirtieth day. Mild infection.

CASE 9.—S. H. H. (No. 1072), admitted, Feb. 7, 1919.

Tuberculosis.—Examination on admission: Chest: Right, slight dulness at apex. Left, moderate dulness to third rib. Right, râles to second rib. Left, râles to fourth rib. Râles only on cough. Condition moderately advanced. Sputum, positive. Diazoreaction, negative. Temperature, from 97 to 99. Patient's pulmonary condition had sightly progressed at time of typhoid fever. Sputum persisted positive. Temperature, from 97.6 to 99.4.

Typhoid.—Onset, August 14. Widal test, positive. Diazoreaction, negative. Highest temperature, 101.4. Patient had typhoid fever in childhood. Temperature returned to normal on twenty-third day. Mild infection.

CASE 10.—L. J. H. (No. 1153), admitted, May 21, 1919.

Tuberculosis.—Examination on admission: Chest: Right, moderate dulness to third rib. Left, moderate dulness to third rib. Râles, apex to base both lungs and middle scapula back. Râles mostly without cough. Condition far advanced. Sputum, positive. Diazoreaction, negative. Temperature, normal. Pulmonary condition had shown slight improvement, and general condition was very much improved before onset of typhoid fever. Sputum persisted positive.

Typhoid.—Onset, August 20. Widal test, positive. Diazoreaction, positive. Before onset, patient was given one injection of typhoid vaccine. Highest temperature, 103. Temperature returned to normal on fifteenth day. Mild infection.

CASE 11.—R. I. V., admitted, April 9, 1917.

Tuberculosis.—Examination on admission: Chest: Right, slight dulness to third rib; moderate dulness at base, and râles on cough to fourth rib, without cough at base. Condition moderately advanced. Sputum, negative. Diazoreaction, negative. Temperature, normal. Patient discharged in November, 1918, with case apparently arrested. Employed as orderly at time of typhoid illness.

Typhoid.—Onset, August 21. Widal test, positive. Diazoreaction, positive. Two injections of typhoid vaccine had been given prior to illness. Highest temperature, 104.2. Temperature became normal, twenty-seventh day. Seven days later a rise to 100.2 was noted. Thrombosis of left femoral vein. Temperature returned to normal on fortieth day. Severe infection.

TREATMENT OF PATIENTS

General Measures.—The typhoid patients were removed to the hospital and placed in well ventilated and screened rooms, and when their condition permitted, the beds were pulled out into an open ward and were covered with gauze netting. It is hardly necessary to state that the patients were requested to change the position in bed sufficiently often to prevent the occurrence of congestion and the development of bedsores.

Prophylaxis.—Strict measures were exercised in proper disinfection of dishes, bedclothing, sputum, urine and feces. All attendants were carefully instructed in the proper use of disinfectants.

Diet.—The high caloric feeding of Coleman was deemed advisable. In Table 1 an example is given of a day's menu with nourishments:

Substitutes of grape juice, baked potatoes, jello, bouillon, buttermilk and malted milk were given from

time to time. Four of the patients were so toxic for a few days that they were unable to take more than 1,500 calories in twenty-four hours; but as soon as possible they were increased to the daily average of 3,500.

Medicinal.—Five grains of salol were given every six hours. Ten drops of dilute hydrochloric acid were given three times a day after eating. Two drams each of aromatic cascara sagrada and glycerin were given every other night, alternating with a soapsuds enema.

Hydrotheraphy.—A tepid sponge bath was given three times a day followed by an alcohol rub. A cold sponge was given only when there was manifestation of nervous symptoms or extremely high temperature.

Convalescence.—Protracted bed rest was deemed essential in all the cases. Those whose pulmonary condition was quiescent prior to illness were kept at rest two weeks before they were permitted to sit up, and those with active trouble were kept at rest for a week longer. During this period, calories were increased and solid food was given as soon as possible in the individual case.

THE EFFECT OF TYPHOID FEVER ON PULMONARY TUBERCULOSIS

The conclusion of the effects on pulmonary tuberculosis in our series of eleven cases was made two months following convalescence. Of this number, four were classed as active with abnormal temperature prior to the typhoid infection, and all were far advanced.

TABLE 1.—MENU FOR A DAY

		Calories
BREAKFAST		
Oatmeal gruel	5 oz.	167
Egg	1	80
Milk toast	1 slice (milk, 3 oz.)	164
Butter	10 gm.	75
Cream	2 oz.	120
Coffee		
Sugar (granulated)	5 gm.	60
NOURISHMENT, 10 A. M.		
Egg-nog	7 oz.	220
Total		886
DINNER		
Cream of potato soup	8 oz.	200
Milk toast	1 slice (milk, 3 oz.)	164
Custard	4 oz.	262
Milk	7 oz.	150
Coffee		
Sugar (granulated)	5 gm.	60
NOURISHMENT, 3 P. M.		
Lactose ice cream	4 oz.	390
Total		1,226
SUPPER		
Beef juice	6 oz.	46
Egg	1	80
Milk toast	1 slice (milk, 3 oz.)	164
Mashed potatoes	50 gm.	41
Cocoa	6 oz.	197
NOURISHMENT, 10 P. M.		
Lactose lemonade	6 oz.	360
NOURISHMENT, 1 A. M.		
Milk	7 oz.	150
NOURISHMENT, 4 A. M.		
Lactose orange albumin	6 oz.	390
Total		1,428
Total for 24 hours		3,540

Two of the four cases have continued to advance, and judging from a report received, the condition of the patient who had returned home has also advanced but in no case more rapidly than before the onset of typhoid. The remaining patient has shown a slight improvement in general condition.

Three of the total cases were classed as active without rise of temperature but with other symptoms, as cough, streaked sputum and pleurisy. Two of these patients have shown improvement in their general condition, while the condition of the other is unchanged.

Three of the remaining four cases were classed as quiescent, and the other as apparently arrested. Two of these patients have shown improvement in both pulmonary and general condition. One has shown improvement in general condition, while there is no appreciable change in the condition of the other.

With one exception, the patients were weighed as soon as they were able to be weighed, and it was found that eight had lost from 5 to 12 pounds and that one had actually gained 5 pounds, while the weight of the other remained the same.

EFFECTS OF TYPHOID VACCINE ON PULMONARY TUBERCULOSIS

In all, sixty-two patients were given three injections of typhobacterin. The inital dose consisted of 500 million bacilli, and the second and third 1,000 million each. The injections were given ten days apart, and the patients, who were on exercise, were requested to remain quiet for forty-eight hours. None were given vaccine if they were having abnormal temperature, or if there was a recent hemorrhage or streaked sputum. Of the total cases, nine were incipient, twenty-four moderately advanced, and twenty-nine far advanced. Of these, thirty-seven were classed as active, and twenty-five as inactive. A reaction was regarded as mild when there was a slight aching, malaise or pleurisy, or if the temperature did not exceed 100; as moderate when the temperature did not go above 101, and as severe when the temperature exceeded 101.

TABLE 2.—REACTION OF TUBERCULOUS PATIENTS TO TYPHOID VACCINE

		No Reaction		Mild Reaction		Moderate Reaction		Severe Reaction	
		No.	Per Cent.	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.
Active	15	41		9	24	8	22	5	13
Inactive	13	52		8	32	4	16		
Total	28	45		17	27.5	12	19.5	5	8

It is interesting to note that a higher percentage of the inactive cases gave a mild reaction than the active cases. As was expected, the active cases gave a higher percentage of moderate and severe reactions than the inactive. The results obtained in our series of sixty-two cases are given in Table 2.

SUMMARY AND CONCLUSIONS

1. The coexistence of these diseases should require a high caloric feeding.

2. Prolonged bed rest during convalescence is advisable as a precautionary measure.

3. Typhoid vaccine gave severe reactions only in the active cases, but with no permanent bad effects.

4. Patients with inactive pulmonary tuberculosis may have typhoid fever without any detrimental effects on the pulmonary condition, while the general condition may often be benefited.

5. Patients with active pulmonary tuberculosis may have typhoid fever and recover without a more rapid advance in the pulmonary condition than would have occurred had they not had typhoid.

6. Pulmonary tuberculosis did not have any appreciable effect on the course of typhoid fever.

Health First Means Safety First.—When all employers realize that medical inspection of employees is quite as important as regular inspection of the machinery itself, we can look hopefully for a great reduction in the amount of accidents.—*Minnesota Health J.*, Nov. 20, 1919.

AN IMPROVED TEST FOR THE DETECTION OF GLUCOSE, ESPECIALLY IN URINE

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Some years ago one of us (Haines[1]) introduced a test for sugar in the urine which has found wide acceptance by the profession. The solution suggested at that time contained copper sulphate, potassium hydroxid, glycerin and water in these proportions:

Copper sulphate	30	grains
Potassium hydroxid	1½	drams
Glycerin	2	fluidrams
Water	6	fluidounces

These proportions have been more or less changed by different investigators and transformed into the metric system. The method, used with this test solution, is generally known and consists in heating to boiling about 5 c.c. of the test solution and adding from 8 to 10 drops of the suspected sample of urine. If sugar is present, a brick-red cloud is formed which eventually settles to the bottom of the tube. This solution, if made with pure ingredients, keeps indefinitely and has been found to be relatively delicate and quite reliable.

It occurred to us that the original solution might be improved on in such a way as to increase its delicacy and also to permit of the performance of the sugar test by the ring or contact method. The modifications introduced by us enable one to detect with certainty amounts above 0.03 per cent. of sugar, which is about the upper limit of the so-called "normal" sugar of the urine. In other words, the delicacy of the test is increased so that sugar in pathologic amount will be indicated, but physiologic sugar will not be shown. While this test is not as delicate as the special solutions of Folin[2] and of Benedict and Osterberg,[3] yet this new Haines solution has the advantage over the latter solutions that it will show sugar only in pathologic amounts, while the other solutions mentioned will show sugar in practically every specimen of urine examined. It is, therefore, a clinical test in contradistinction to the others, which are too delicate for such purposes.

Owing to the increase of the specific gravity of the solution, by the addition of the larger amount of glycerin, the employment of the contact test becomes a matter of the greatest simplicity. However, one precaution must be taken before this test may be applied: Owing to the fact that the phosphates of the urine precipitate, when added to the alkaline copper solution, these interfering substances must be removed before the contact test shows in its most perfect manner; otherwise a confusing contact ring is observed, which might lead to possible errors in interpretation. This removal is accomplished by adding to the urine in a test tube 5 or 6 drops of a 5 or 10 per cent. solution of sodium or potassium hydroxid (or the official liquor potassii hydroxydi may be used), and allowing the phosphates to settle out or centrifuging or filtering if desired to hasten the process. For coarser clinical purposes the test may be used with urine from which the earthy phosphates have not been precipitated, and we have occasionally employed it in this way. If the sugar present is 0.1 per cent. or upward, the reaction with the untreated urine usually comes out quite unequivocally; but, if the amount of sugar is below 0.1 per cent., the removal of the phosphates is essential to obtain entirely reliable results. It was thought that this precipitation of phosphates at the point of contact could be averted by the addition of sodium citrate or Rochelle salt to the copper solution, but this was found to be ineffective, as the ring appeared, although slightly slower, even when as large amounts as 30 gm. of either of these salts were added to 100 c.c. of the copper solution.

The composition of the improved Haines solution is:

Copper sulphate	5 gm.
Glycerin	250 c.c.
Potassium hydroxid[4]	20 gm.
Distilled water to	1,000 c.c.

The copper sulphate is dissolved in a mixture of the glycerin, and an equal amount of water, with the aid of gentle heat. The potassium hydroxid should be dissolved in about 200 c.c. of water and added to the copper solution with constant stirring, the whole being made up to volume with distilled water. This solution keeps indefinitely, although with many of the specimens of glycerin now obtainable on the market a reduction may be observed. If, however, the solution be allowed to stand in a warm place for forty-eight hours, the clear supernatant fluid may be decanted or filtered from the precipitated cuprous oxid, without impairing its delicacy.

This solution may be used in the same manner as directed for the original Haines solution, but a much more delicate and beautiful reaction is obtained as follows: Heat about 5 c.c. of the copper solution to boiling in a test tube, remove from the flame, and hold at an angle of from 30 to 40 degrees. To this add, by means of a medicine dropper, from 10 to 20 drops of the urine, freed from phosphates as outlined above, in such a manner that a distinct zone of contact is formed between the copper solution and the urine. The tube is then placed in an upright position and the reaction noted. If sugar is present in quantities exceeding 0.1 per cent., a brick-red or yellowish ring will immediately appear at the junction of the two liquids. If the amount of sugar is less than 0.1 per cent. ranging down to 0.03 per cent., the ring will appear in from a few seconds to slightly less than a minute, the smaller quantities showing slower reactions with a tendency to a more yellowish color of the ring. In urines containing no pathologic sugar, no ring of any kind will be noted at the zone of contact.

In order to determine whether this new Haines solution offered any advantage, in the performance of a contact test, over other qualitative sugar test solutions, comparisons were made with the solutions of Benedict[5] and of Folin and McEllroy.[6] With the solution of Benedict, using the phosphate-free urine, a slight white contact ring was formed with normal urines, and with sugar-containing urine no distinct ring, indicative of sugar, was observed until the solution had stood for considerably longer than was neces-

1. Haines, W. S.: Med. Examiner **15**: 569 (Dec. 1) 1874.
2. Folin, Otto: J. Biol Chem. **22**: 327, 1915.
3. Benedict, S. R., and Osterberg, E.: Determination of Sugar in Normal Urine, J. Biol. Chem. **34**: 195 (April) 1918.
4. Or 14.3 gm. of sodium hydroxid.
5. Benedict, S. R.: J. Biol. Chem. **5**: 485, 1908-1909.
6. Folin, Otto, and McEllroy, D. S.: J. Biol. Chem. **33**: 513 (March) 1918.

sary with the Haines solution. When the solution of Folin and McEllroy was used with phosphate-free urine, the contact ring in normal urines was so marked that it could not permit of the use of this contact test.

This improved Haines test has the following advantages:

1. The reaction is concentrated to a single plane, thus increasing its visibility.
2. Only one heating is necessary, and there is no long standing before the reaction appears.
3. It will demonstrate pathologic sugar in amounts greater than 0.03 per cent.
4. It differentiates between pathologic and physiologic sugar.
5. It gives a clear-cut, decisive result in a minimum of time.

TUBERCULOSIS

A CITY PLAN*

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It may be said "'tis not in mortals to command success," yet there may be some doubt in our minds whether in our past efforts to control tuberculosis we have quite deserved to succeed.

If we will look back fifty years into the history of medicine it will be clear that the clinical symptoms of tuberculosis, the case histories of the disease, and the pathology of the gray tubercles were intimately known. Austin Flint in America, and Trousseau in France had demonstrated the relationship between tuberculosis and the lack of fresh air and sunshine, sedentary occupations, and those conditions that are the result of careless and unclean habits found in congested areas of population. Furthermore, the infectivity of the human tuberculous lesion had been suggested by Villemin's experiments with guinea-pigs in 1865. Aitken, writing at this period, said, "The stabled cow, the rabbit, the monkey, the caged lion, tiger or elephant, are almost invariably cut off by tuberculosis affections."

Koch's brilliant discovery of the causative organism in 1882 served to place the seal of certainty on the theory of infectivity, but did not add to our knowledge as to the paths of infection or the manner in which infection might be conveyed.

A review of the yearly mortality from tuberculosis will show that throughout the civilized world there has been reported year after year a continuous decrease. The picture, however, is not comparable in extent with that seen in the number of deaths from epidemic diseases in general; the curve of decline is less abrupt, the grade gentle and in sharp contrast to that seen in scarlet fever, diphtheria, typhoid fever or in smallpox.

It may be said that in spite of the great decreases recorded in the mortality from tuberculosis in the registration area, the disease must be still prevalent to a degree resembling the widespread epidemics of contagion of earlier days. In spite of intimate knowledge, it is evident that our empiric methods have so far failed. Tuberculosis, "lingering like an unloved guest," by its very perversity calls for our utmost efforts for its eradication.

The draft examinations are too recent for us to forget the 82,000 young men who were reported as unfit for national service on account of tuberculosis. The experiments at Framingham have demonstrated that at least 2 per cent. of an average industrial community would be found after examination to be suffering from tuberculosis in some form or other, and they have left an increasing feeling that we are as yet ill informed as to the physical standing of communities. In the country at large it is estimated by the National Industrial Conference Board that 1 per cent. of the total population is tuberculous.

In looking at these enormous figures it is evident that the control of tuberculosis is still far from what it should be in the present state of our knowledge. Tuberculosis has been regarded as a disease that is the result of hereditary inclinations, and then again as a disease of a contagious and communicable nature; nevertheless there has been no decided decrease in the mortality figures. If tuberculosis were a communicable disease whose clinical symptoms were easily discoverable, the problem of control would be simple. It is more than this, however, for like the venereal disease it presents the twofold aspect of a communicable disease and a social problem so important as to require a complete readjustment of our views on the subject.

There is a factor in its persistence that has somehow escaped our notice. It may well be that this is the neglect of the social side, and that it is responsible for our failure to bring about good results that are more permanent in tuberculosis control. Support of this view is found in the acknowledged experience that the onset of the disease is largely dependent on unusual habits and manners of living which subsequently react in physical susceptibility. Probably too much emphasis has been placed on the contagious disease aspect and too little on the predisposing causes. The social factor is also strong in determining the opportunity for early advice and treatment. Society makes as yet no provision for sick pay, either for the patient or for the dependent family.

Tuberculosis will not persist when communities live right; when fresh air is regarded as a vital necessity, and when methods of living depart least from accepted standards of health. On the other hand, in this country there may be certain national and climatic conditions which bring about a susceptibility to tuberculosis. Our severe winters are probably responsible in part for the depressing influence of overheated dwellings. The craze for up-to-date bathrooms and plumbing may well have brought about the greater danger of the common wash basin. The old-fashioned ewer and basin in each bedroom, although inconvenient, certainly provided the more sanitary equipment for the home.

In outlining a city plan for tuberculosis control, modifications will be found necessary to meet local conditions. Any occupation or community life in which conditions are apparently predisposing toward tuberculosis will require special handling.

The city plan may be divided into certain definite lines of activity, as outlined in the accompanying tabulation. None of these separately can be considered more important than the others; the success of the whole will depend on the acceptance of the value of each.

CONTROL OF INFECTION

Reporting by Physicians.—In the control of infection it will be agreed that it is vitally important to know where the disease exists, for without this knowledge no supervision is possible. There is some doubt, how-

* Read before the New Jersey Anti-Tuberculosis Association, Paterson, N. J., Nov. 8, 1919.

ever, as to what shall constitute a good standard of reporting excellence.

If we accept the dictum that there are twelve persons with tuberculosis for every recorded death from the disease, a city with an annual total of 100 deaths from tuberculosis has probably 1,200 persons afflicted with the disease in various stages. The average duration of life of the tuberculous person is difficult to estimate since there are so many variations in bodily resistance to the progress of infection. If the average duration of life in a purely empiric way is stated as three years, then a city with this number of deaths should have about 450 reported cases annually.

If the number of reported cases in any community is three times as large as the number of deaths from tuberculosis, we probably have a fair measure of notification by physicians. In checking up the reporting of cases, much information is obtainable by comparing deaths with report files. Duplicate reports of cases by one or more physicians should be accepted and paid for. The physician has no means of telling whether his patient has been reported previously. Similarly a follow up system of all sputum examinations made by municipal laboratories affords much information as to

CITY PLAN FOR TUBERCULOSIS CONTROL

A. Control of infection...	Reporting by physicians Hospitals and sanatoriums Day camps and tents; field nurses Laboratory; enforcement of anti-spitting laws; milk supervision
B. Social progress.....	Publicity Social insurance Antituberculosis societies program Home visiting and relief
C. Economic improvement	Improved housing Industrial hygiene Open air school Vocational training Employment bureau
D. Associated activities...	Control of epidemics (measles, whooping cough, etc.) Convalescent homes Child hygiene Mental hygiene

accurate reporting. In this respect a policy of wise toleration that does not degenerate into the actual condoning of violations of the reporting law will prove an incentive to efficient reporting by physicians.

Nurses.—The services of the health nurse are too widely appreciated to require more than a brief comment. The importance of her work in the control of infection cannot be overestimated. The widest measure of success with the public depends as ever on the possession of tact and judgment, backed up by special training. I do not believe that a health nurse can give efficient service in a department unless her lines of action are specialized. An old adage still holds true: "Jack of all trades, master of none." It is only by special qualities of training and intelligence that a supervision of the tuberculous patient is possible which, apparently unobserved by the law abiding patient, is still there when occasion demands more drastic methods. The visiting nurse requires for the salvation of her patient the freest possible hand. Impossible tasks, such as the care of many patients, should not be attempted. It has been our experience in Newark that the best work is obtained when no more than 100 cases are assigned to each nurse. This number will generally bring about a fair return of intelligent interest in the patients, provided distances are not excessive.

When the number of nurses is limited and the patients requiring supervision are many, areas of greatest prevalence may be selected for intensive work. In any case, interest tends to be lost when patients are many and the distances between visits are great. Let me state here that the work of the tuberculosis nurse is a health function. Only under a municipal board of health can the best results be attained in obtaining the necessary cooperation with municipal departments, with hospitals and other social agencies.

Clinics.—Activities against tuberculosis must radiate from the dispensary clinic as a center. Dispensaries are not always located in ideal neighborhoods. If a choice is possible, areas where tuberculosis is most prevalent should be selected. It must not be forgotten that a long trolley ride to a dispensary will seriously dampen the enthusiasm of the most optimistic nurses or patients. To the clinic come the ambulant patients not under private treatment, as well as all exposed children. An attractive feature for children is the provision of free milk or other food, such as biscuits. Milk for the purpose may be provided from what is left of milk samples taken by department milk inspectors. Little children are frequently reconciled to the discomforts of a physical examination if a glass of milk is held in one hand and a cracker in the other. Special efforts to attract mothers with children to the clinic are frequently successful if free transport to and from a clinic is provided. In Newark a special ambulance donated by the Red Cross performs wonderful work in this way.

In providing the free distribution of necessary sick appliances in dispensaries, extreme generosity with regard to sputum cups, towels and disinfectants is a good policy. Patients sometimes complain of the difficulty of obtaining metal sputum cups from medical supply houses. A number of these may well be stocked in the dispensary and sold to patients at cost.

Centralization of effort will result if the examinations for state and county sanatoriums can be made at the municipal clinic. Very definite efforts can also be made by means of illustrations and literature to influence patients to undergo hospital treatment. There has been some effort to discourage the term "tuberculosis clinics" and to substitute the term "health clinics." This is in line with the present day application of tuberculosis psychology, and may be employed without any loss of efficiency.

Where there are large colored communities, a special clinic is desirable. Colored physicians and nurses of a high type can be obtained with little trouble for the staffs of these clinics, and the results will repay the added outlay.

Hospitalization.—In Koch's original monograph he drew particular attention to the low tuberculosis mortality experienced in those European countries where hospital beds were provided in large numbers for tuberculosis sufferers. A similar experience has been noted in this country. Bonney says: "The evidence thus far presented is quite overwhelming to the effect that the closed institutions are everywhere responsible for a material diminution in the tuberculosis mortality rate among the neighboring inhabitants." Among the important efforts against tuberculosis is a campaign for an adequate number of sanatorium beds. Some beds should also be provided in local hospitals for emergency

bedridden patients waiting for admission to the county institution.

Boards of freeholders will seldom act to provide increased accommodations unless a popular demand for them is made very clear, backed by the opinion of the local boards of health. Such a campaign is necessary in every county in this state. That the present accommodation throughout New Jersey is inadequate is evident. More than half the counties of the state have no sanatorium at all for tuberculosis patients, and in only one, Union County, does the accommodation equal the minimum of one bed for each death from tuberculosis.

Before, however, sanatoriums can accomplish their function of healing every class of the community, a considerable change must take place in the attitude of the tuberculosis sufferers toward these institutions. The tuberculosis sanatorium is commonly regarded as the final step before dissolution instead of, as it should be, the first step toward recovery. For this public view the representative tuberculosis institutions are not to blame. The sanatorium must admit every suitable patient for treatment. It is no one's fault that patients have been largely recruited from the riffraff of the saloon, and the down and outs of public lodging houses, who are generally as hopeless in prognosis as they are in the finer feelings of respectability. It is unfortunate that public opinion has been allowed to look on our sanatoriums as institutions for incurables instead of places for recuperation and recovery.

It is desirable that institutional traditions in tuberculosis sanatoriums be reduced to a minimum. Freedom and homelike surroundings are synonymous: all that is needed is to cure temperamentally as well as physically. It is only in this manner that the person in the early stage of tuberculosis can be persuaded to take hospital treatment. As an indication of what should not be done, only recently a visitor to a well known sanatorium before being admitted to the ward was required to be swathed in a white robe, cap and respirator. What an unforgettable vision he must have been to the highly neurotic tuberculosis sufferer.

Day Camps.—It has been the experience of many communities that patients will attend day camps who refuse all other kinds of outdoor treatment. The attractive features are greater freedom, less restrictive rules, food and free medical advice. The patients can go and return home every night. Such a camp can be established on vacant land owned by the city, and purchased with city funds or bought by private subscription. These camps are not expensive, and they give satisfactory return for the expenditure. The tent colony carried out in some cities is equipped for all purposes, and includes dining hall, cooking tent and special accommodations for men and women. The attraction in this plan is its elasticity. Only enough tents need be erected to meet prevailing demands. The opportunities are for education in the personal care and prevention of infection, for medical treatment, and for vocational training. In Newark, tents bought by public subscription and presented to the department of health are lent to patients for use in back yards or adjacent lots. The plan works well, but requires careful selection of patients granted the privilege.

Laboratory Facilities.—The use made by physicians of laboratory facilities will depend very much on rapid and consistent service. The laboratory must be fed by a good system of culture stations, preferably located in drug stores where supplies of sputum boxes may be obtained and where specimens may be left for collection.

Antispitting.—Spitting in public places should be regulated by an active propaganda. Public notices placed on road and traffic signs are effective reminders if sanitary inspectors are occasionally detailed on the streets to make arrests. The fine imposed for this offense should be a small one, the police proceedings being sufficiently deterrent in themselves. The fine in Newark is from $2 to $10. It is better to have a small fine collected than one so large that judges hesitate to impose it.

Milk Supervision.—It is contended that about 6 per cent. of all tuberculosis cases are of bovine origin. Where there is a raw milk supply, constant vigilance at the point of production is the only safeguard against tuberculosis. The tuberculin test of all cattle used for raw milk supplies must be insisted on. Careful watch on this type of dairy herd should be kept for plugged cattle and infected udders. The tuberculin test is usually required by municipalities annually, and it might well be made every six months. No new cattle should be allowed to be added to a herd before being tested. No local board of health should allow the sale of raw milk unless the supervision as outlined above is possible. The alternative is pasteurization of all milk supplies at the point of production.

SOCIAL PROGRESS AND RELIEF

There is no disease so closely connected with poverty and general distress as tuberculosis. All conditions found under these circumstances make for a more effective spread of infection. Intimate contact without regard to personal protection, filthy hands, food and china, and contaminated fingers are the supposed ways of spreading infection.

Much of the dirt, squalor and misery found in tenement life undoubtedly will favor infection with tuberculosis, but many of these unfortunates are themselves recruited from the ranks of the tuberculous. Improvement in the situation must come from every direction, and will be facilitated by an awakening of the people to the fact that clean habits and customs of living should be more a commonplace than an exception.

The pioneer work of the antituberculosis associations, national and state, in bringing the knowledge of the facts of tuberculosis to the public will always remain a wonderful tribute to patient and persistent effort. It is these associations alone that we must thank for the general recognition by the public of the gravity of the tuberculosis situation, as it is through their efforts that local boards of health have adopted more active methods to combat the disease. Where the tuberculosis association may well remain a valuable agency is in arranging plans for active public propaganda. There is much work for these associations to do along educational, social and economic lines. Their independence as citizen committees gives their efforts an appeal to public sympathy always timely and effective in results. What shall be done to relieve the poverty in tuberculosis is a question always demanding and receiving no satisfactory answer. Food, clothing and money for rent are constantly asked for, or at least obviously needed. These patients should not be poor and applicants for alms. Their poverty is due not to vicious habits, intemperance or crime, but to the effects of a disease which they surely would have been protected against if society had been properly organized. The tuberculosis victim can surely demand the

protection of the community, not in doles of charity but as sick pay, rightfully earned by labor for the community. How such a scheme of assistance should be carried out is still a matter of conjecture. Many authorities are in favor of state or national health insurance. Whatever objections may be brought against such a scheme, its advantages in tuberculosis are obvious and incontestable. Last year a bill was presented to the New Jersey legislature for the relief of tuberculous families, allowing each dependent adult $5 a week and each child under 14 years of age $3. This pension was not to be distributed through municipal poor and alms departments but by the state department of health. The bill was presented too late to be included in the appropriation bill, and will be redrafted and presented this year. Special legislation for relief covering tuberculosis alone is a logical procedure until a scheme for insurance against all disease hazards is adopted.

ECONOMIC IMPROVEMENT

Improved Housing.—It is because the problems of economic improvement are spectacular that the public has learned to attach much importance to them. The economic side appears more national in character and has a wider appeal than any other view. The housing situation is the same in most cities that have a tenement or slum population.

The poor and destitute always gravitate toward the cheap tenements. The cheap tenement is badly kept up, is persistently insanitary, and escapes the control of tenement house commissions and local boards of health by constant change of ownership. Dark, damp, ill ventilated rooms are tolerated because they are cheap, and the tenants, fearful of eviction, will not complain. Few boards of health have a staff sufficiently large to inspect continually the conditions in all the tenements within the municipal area. Such buildings may be sanitary one day and indescribably foul the next. The only logical method of control is to pick out the plague spots and center intensive sanitary work on them. A list of tenement houses of a suspicious nature is most useful for local boards of health to have on record. The tenement house commission of New Jersey has adopted a score card for tenement houses which shows at a glance the structural condition of any one tenement building. These score cards will be available to local boards of health and will be a valuable index of housing conditions in these tenements, pointing out the worst places for intensive health work.

It is clear, however, that these insanitary habits are not necessarily confined to the poor and destitute, for tuberculosis is found in all stations of life. As Ritter says, "We may improve the most insanitary house or room, and make it habitable for either sick or well; but if we neglect to improve the occupant or occupants of the house, our efforts will be of no avail. Sanitation of the house must go hand in hand with personal and family hygiene."

Poverty is not the cause of tuberculosis; more truly poverty may be called the result of tuberculosis, for the disease by its long drawn out clinical history and the resultant physical incapacity is but a graduation from poverty to distress and family destitution.

The greater number of tuberculosis victims end their sufferings amid conditions of want and family neglect. The sick person has outstayed his welcome, his relatives are all working and will not have him, and the meager dole of municipal or voluntary organizations makes him a human wreck most frequently beyond hope of salvage.

"The improvement in housing, the abolition of old tenement buildings, and the erection of new, light, sunny and well ventilated dwellings have been urged as the panacea that will exorcise the tuberculosis demon. This would be a worthy proposition if a similar change could be assured in the people thus translated from a bad to a good environment."

Ritter[1] supplies his own answer:

> Now if such a supposed or active tuberculous individual were suddenly placed in a most hygienic room with plenty of sunlight and fresh air, a complete change of his environment, how long would these improved conditions prevail? . . . Would the occupant improve in his new surroundings or would the room rapidly retrograde? In all probability in a very short time we would find this sanitary, hygienic surrounding and well aired room in a most insanitary condition.

Industrial Hygiene.—For the control of tuberculosis, many fads have held sway. The effect of dusty trades on the prevalence of the disease has perhaps been unduly emphasized. Giving all due credence to the harmful effect of foreign matter on lung tissues, there is insufficient evidence to show that mechanical injury to the lungs is the frequent precursor of infection. As Bonney[2] remarks:

> There are many other pursuits exhibiting a frightful mortality rate from tuberculosis in which inhalation of dust from any source cannot be regarded as a definite etiologic factor. . . . It is quite as reasonable to attribute the development of consumption to the effect of the ten or fourteen hours spent in the home as to the eight or ten passed in the workshop.

There are, it is true, trades and occupations which predispose to tuberculosis. Vast strides have, however, been taken in late years to improve the conditions in factories by the state department of labor. The effect of dust and fumes has been reduced to a minimum by effective mechanical devices, and there are few factories at this time in which dust is allowed to exist so as to be a serious hazard to health. The workers themselves with the aid of their trade unions are demanding better working conditions in factories and workshops. There is, however, much room for improvement in the working conditions of labor which only boards of health can properly supply.

The sanitary survey shows the diseases of occupation, the hours of labor and the special employment of women as subjects that can best be cared for by a bureau of industrial hygiene. At least diagnostic clinics are advised where expert advice may be obtained free or for a small charge.

ASSOCIATED ACTIVITIES

The importance of associated activities is evidenced by the control of epidemics bringing about a lessened prevalence of diseases such as measles and whooping cough. Child hygiene activities are important in protecting the mother, whose weak condition after childbirth or disease may well predispose toward tuberculosis. Convalescent homes for the treatment of hospital patients to insure good recovery before they return to their homes will surely be an added link in the chain of protection. Mental hygiene, our newest

1. Ritter: Bull. Chicago Tuberculosis Institute, 1916.
2. Bonney, S. G.: Pulmonary Tuberculosis and Its Complications, Philadelphia, W. B. Saunders Co., 1910.

health activity, will function to reduce the subnormal conditions harmful and prejudicial to the health of the family.

CONCLUSION

Finally, let me paraphrase a well known health motto:

"Freedom from disease is purchasable: within certain limits a community may by its own endeavors control tuberculosis in its midst."

51 Cypress Street.

THE SELECTION OF OPERATION FOR EXOPHTHALMIC GOITER *

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Surgery, at the present time, gives a higher percentage of cures than any other measure in the treatment of exophthalmic goiter. For a number of years the mortality following surgical procedures has gradually decreased, largely because much has been learned regarding the selection of the type of operation which is safest in any given case, and because the greater number of patients are operated on earlier in the course of the disease than formerly, and at a time when they are better surgical risks. It is possible to operate by present day methods in a large number of consecutive cases of exophthalmic goiter without a death. There are, however, a few patients who fail to respond to preoperative medical treatment and who must be subjected to operation at a relatively high risk, in order to offer a chance for cure. Refusal to operate in this group of cases naturally diminishes the death rate. On the other hand, poor judgment in selecting the type of operation which is best and safest in a given case, and in advising operation in certain cases that are nonsurgical at the time, increases the mortality.

If the disease is left to run a normal course, it progresses in several different ways. In a few instances the onset is sudden, with rapid development of symptoms, and the progress is so quick that the patient soon becomes a poor surgical risk. In the greater proportion of patients, however, the onset of the disease is so gradual that in its incipiency it can scarcely be recognized save by one highly experienced in the diagnosis of hyperthyroidism. In such patients the symptoms gradually increase in number and severity, and an enlargement of the thyroid gland occurs. As a rule the disease reaches its height during the second six months of its course, and the patient passes through a period which usually is referred to as a crisis. During such periods all the symptoms become markedly exaggerated; the pulse rate is high, there is rapid emaciation and loss of weight, with extreme nervousness and mental irritability, and often vomiting and diarrhea; marked damage occurs to the vital organs, such as the heart, liver, and kidneys. Unless the disease proves fatal, the majority of patients improve greatly after a period of from one to several weeks, although as a rule they are never so well after having passed through a crisis as they were before. The amelioration of symptoms may persist for a period varying from a few months to several years, but in the majority of patients a second or even a third crisis eventually develops. With each crisis the damage to vital organs, especially the heart, liver, and kidneys, increases, until the patient finally suffers more from the symptoms produced by these degenerative changes than from the disease itself. In a third, but small group of patients, the disease runs a chronic course from its onset without the development of acute crises.

Fortunately and unfortunately, patients improve when treated medically: fortunately, because patients unfit for surgical treatment may improve to such an extent that they become fairly good surgical risks; and unfortunately, because a knowledge of the fact that improvement occurs under medical treatment leads many practitioners to use only medical measures in the management of exophthalmic goiter, apparently without fully realizing the sad state to which a large percentage of the patients thus treated will be ultimately reduced. Many patients who have been treated medically for a long period apply for surgical aid and are found to have such marked degenerative changes in their vital organs that it is impossible for surgery to effect a cure. Operation usually stops the progress of the disease even in this stage, but the damage to the vital organs cannot be repaired; it would be quite as reasonable to expect to cure patients with well pronounced nervous lesions from tertiary syphilis by means of antisyphilitic treatment.

It is often a perplexing problem to decide just how toxic a given patient is and how much damage has been produced by the disease, and for these reasons it is difficult to decide what operative procedures the patient will safely endure. Although the mortality is largely affected by the decision, no absolute rules can be given as to the selection of the best type of operation; each case must be judged on its own merits. A condition which in one patient would justify the performance of a thyroidectomy, in another patient would be counterbalanced by some other factor that would make the operation dangerous. There seems to be no way of elucidating all the possible conditions that may arise, as these can be recognized only by observers who are highly experienced in dealing with exophthalmic goiter.

In operating in such cases at the Mayo Clinic, certain factors are taken into consideration in selecting the type of operation. The ideal surgical procedure in exophthalmic goiter is partial thyroidectomy as soon as the first symptoms of the disease appear and it can be definitely proved, by metabolic tests, that hyperthyroidism is present. At this stage of the disease, a primary thyroidectomy can usually be performed with a very low death rate, and many such patients are restored to normal health. The percentage of patients operated on during the early stage of the disease is steadily increasing, and an increase in the percentage of cures will result.

It cannot be denied that certain patients improve and apparently recover under medical treatment. However, in the beginning of the disease it is impossible to distinguish between the patients who may fall in this group and those who are destined to suffer severe damage as the disease progresses. Great responsibility is assumed, therefore, by advising medical treatment in early cases, in which thyroidectomy might prevent the severe conditions and in many instances the death of patients who would fail to improve under medical treatment.

The metabolic rate is a definite index to the degree of hyperthyroidism in a given patient at a given time. It is of very great value as a diagnostic aid in the early stages of exophthalmic goiter, when studied in con-

* From the Mayo Clinic.

junction with the symptoms and general appearance of the patient. As a rule, the clinical picture presented by the patient, the metabolic rate, and the pulse pressure run hand in hand, the symptoms increasing and decreasing as the metabolic rate varies. However, patients do not always present the same clinical picture while carrying similar metabolic rates; for instance, one patient with a rate of + 50 per cent. may be in a crisis and extremely ill, while another with the same rate may show a very different clinical picture and be a fair surgical risk. Some persons seem to develop a certain tolerance to increased metabolism. We occasionally see a patient who, although carrying a safe metabolic rate, must be classified as a bad surgical risk. Later, the same patient, while carrying the same rate, may present a different clinical picture and stand the operation which previously was considered unsafe. In all instances in which a high metabolic rate is associated with symptoms indicative of a high-grade toxemia, such as nervousness, irritability, cardiac dilatation, high pulse rate, loss of weight and strength, nausea, vomiting and diarrhea, the condition must be looked on as serious and nonsurgical. The metabolic rate gives no indication of the amount of damage which may have been done previously; it can be used only partially as a means of deciding on the best type of operation to be performed. We make a careful selection of the type of operation for patients with a rate above + 40 per cent., and we hesitate to perform a primary thyroidectomy in patients with metabolic rates 60 to 70 per cent. above normal. In the majority of such patients without marked cardiac damage, and who, except for this high rate, would seem good risks, we perform a preliminary ligation as a means of testing their ability to stand any operative procedure without the precipitation of an acute hyperthyroidism. If a mild reaction follows the ligation, a thyroidectomy is performed after seven or eight days; but if the reaction is severe, it is best to do a second ligation and to wait three or four months before performing a thyroidectomy.

Certain patients, after having had the disease for some months, present themselves for treatment because of increased symptoms. As a rule they have lost weight and probably are losing weight at the time. Such patients will usually be found to have high metabolic rates. If the loss of weight and general strength has been marked, and especially if the patients are highly nervous and irritable, we have found that a thyroidectomy is performed with considerable risk because in these cases a crisis may be precipitated by even a slight surgical procedure. In such instances we usually perform two superior polar ligations, under local anesthesia, at one operation or at intervals of seven or eight days, and wait for three or four months before performing a thyroidectomy.

Patients who consult us during acute crises are considered extremely dangerous surgical risks, and we prefer to treat them by means of rest, fluids and careful nursing until the crisis is passed and there is a gain in weight, with a corresponding subsidence of the pulse rate, the nervousness, and mental irritability. The metabolic rate usually drops considerably following a crisis; therefore, patients who have just passed such a period are not likely to be thrown into an acute hyperthyroidism by a thyroidectomy; but on account of the marked degenerative changes in their vital organs and the weak, degenerated heart muscles, the operation may prove a dangerous procedure. In such patients we have usually found it safer to perform two superior polar ligations, under local anesthesia, seven or eight days apart, thus preparing the way for thyroidectomy several months later.

In a few patients who seem to be risks for any surgical procedure and who fail to respond to medical treatment sufficiently to warrant an operation, we occasionally are able to perform two ligations at intervals of from seven to eight days after having made one or two injections of quinin and urea hydrochlorid solution or of hot water, into the thyroid gland. Such injections seem to lessen the tendency to excessive reaction following ligation.

It will be noted that ligation is performed with two ideas in view: first, as a means of testing patients who seem fit surgical risks for thyroidectomy but concerning whom there is enough doubt to make ligation the safer procedure, and second, as a means of preparing patients for thyroidectomy.

Patients who are being tested and who stand a ligation well can, in the majority of instances, stand a thyroidectomy. The reaction following the ligation of one superior pole, performed under local anesthesia, is similar to, but much less marked, than that which occurs when a thyroidectomy, instead of a ligation, is done. This reaction consists of an increase in the pulse rate and temperature, vomiting, nervousness, and mental irritability; it usually begins within a few hours after the operation has been performed, gradually increases, and reaches its height within from thirty-six to forty-eight hours. In exceptional cases it may be so marked as to produce death from an acute hyperthyroidism in from one to four days following operation. As a rule, however, it begins to subside after from forty-eight to seventy-two hours and, in a few days, the patient is in a state similar to that present before the operation. In cases in which the reaction following such a ligation is marked we perform a second ligation, and later a thyroidectomy.

When ligation is done with an idea of preparing patients for thyroidectomy, the superior pole is ligated on each side, under local anesthesia, at intervals of seven or eight days, and the patient is allowed to wait for three or four months before a thyroidectomy is done. During this period there is usually a marked abatement of symptoms and an increase in weight averaging about 21 pounds for each patient, while the general improvement is such that a thyroidectomy may be done with comparative safety. As a matter of fact, in some of these cases the surgeon hesitates to recommend a thyroidectomy; but experience has shown that hyperthyroidism may recur in from one to five years unless a thyroidectomy is done.

The degree of improvement which follows thyroidectomy depends largely on the extent of damage to the vital organs at the time of operation and on the amount of thyroid tissue which is removed. If the damage to organs has been extensive, it is impossible to restore the patient to normal health; the operation usually stops the hyperthyroidism and great improvement follows, but the organs do not return to normal. In doing a thyroidectomy on a patient with exophthalmic goiter, we have found that in order to bring the metabolic rate to nearly normal it is necessary to remove all of one lobe, the isthmus, and the greater portion of the other lobe, leaving a piece of gland tissue probably not larger than one half or one third of a normal sized lobe. If not enough thyroid tissue is removed, and this may be proved by metabolic tests,

the patient may be benefited, but will continue to have symptoms of hyperthyroidism. In a few patients, the remaining portion of the thyroid gland hypertrophies and the symptoms recur. In either case, if the metabolic rate indicates a degree of hyperthyroidism which seems incompatible with good health, we reoperate and remove a portion of the thyroid tissue which was left at the first operation.

LETHAL DOSE OF ROENTGEN RAYS FOR CANCER CELLS *

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Within the last few years, and especially since the introduction of the Coolidge tube, much has been accomplished in the establishment of suitable dosage for the therapy of superficial and benign skin lesions with the roentgen ray. The lethal dose for cancer cells, however, has not, so far as we are aware, been accurately determined for filtered rays of short wave length such as are now used for deep therapy. The experiments described below were, therefore, undertaken in 1916, with tissue growing in culture as well as in the living animal.

There is a distinct advantage in the use of animal tumors, as they furnish an easily reproducible standard for biologic calibration of the output of any roentgen-ray machine and of the effects of filters, while human material is extremely variable in its resistance to the rays, ranging from the basal-cell epitheliomas, which often yield to a single erythema dose, to the chondrosarcomas and fibrosarcomas, which are much more resistant than healthy tissue and in many instances cannot be influenced by any quantity of roentgen ray which does not endanger the life of the patient.

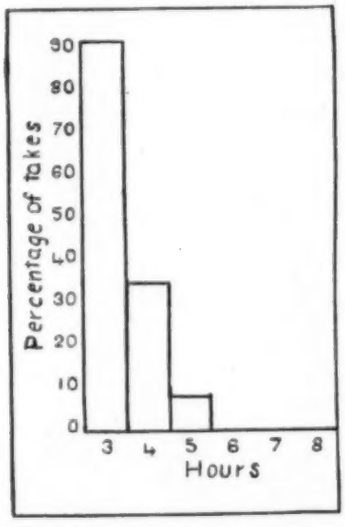

Fig. 1.—Results of exposure of mouse sarcoma 180 in vitro to one-fourth dose of roentgen ray, 85 kilovolts strength, at 23 cm. distance, with 3 mm. aluminum filter.

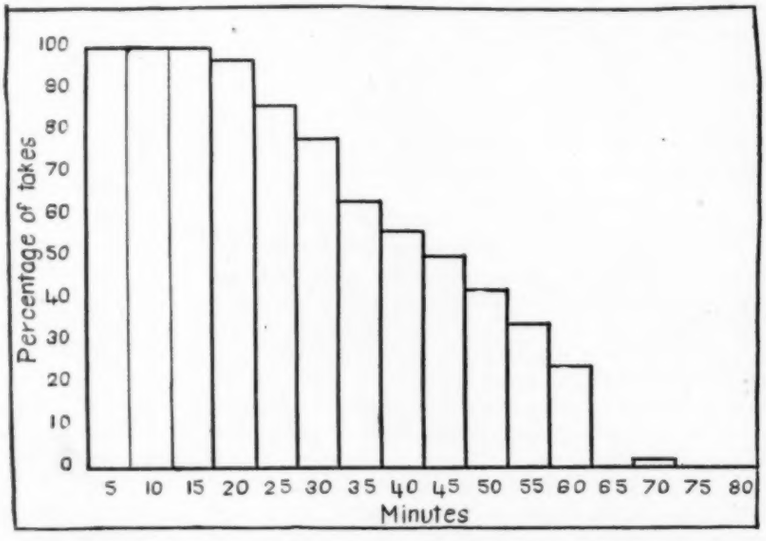

Fig. 2.—Results of exposure of sarcoma 180 in vitro to roentgen ray, 85 kilovolts, 5 milliamperes strength, at 23 cm. distance, with 3 mm. aluminum filter.

The difficulty of accurately measuring the dosage of roentgen ray compelled the repetition in 1918 and 1919, of much of the previous work; but the ultimate figures are quite concordant with the preliminary ones, the slight differences being largely attributable to a more efficient transformer which was substituted for the one first used, and to the more accurate measurement by ionization methods of the roentgen-ray output.

In most of the investigations which have previously been made on tissues under these conditions, very soft rays were used, the penetration of which was limited, so that a large dose could not be given the deeper tissues without destruction of the skin, as was well shown by the experiments of Wedd and Russ.[1]

Quite recently, Kimura[2] published an account of a number of radiation experiments, but in all his series he also used very soft unfiltered rays, with a spark gap of from 4 to 8 cm. Such soft roentgen rays have, as just stated, a practical therapeutic value only on superficial growths, the penetration being very slight; and the general tendency at present is to use highly filtered rays with a spark gap of from 8 to 9 inches, representing a terminal voltage across the tube of from 80 to 90 kilovolts. When low voltage is used, the effective roentgen-ray output from a tungsten target tube is small, the K radiation appearing only when about 70,000 volts are applied to the tube terminals, while a much higher yield is apparent with from 80 to 95 kilovolts.

Since this work was completed, German journals have been received containing reviews of a monograph by Krönig and Friedrich,[3] unfortunately at present available only in abstract, and also two papers by Seitz and Wintz.[4] Both groups of investigators used ionization apparatus to measure the dosage of roentgen ray, and report that they have determined the carcinoma

* From Columbia University, George Crocker Special Research Fund, F. C. Wood, M.D., director.
* A preliminary report of some of this work was read before the American Association for Cancer Research in March, 1918, and published in the Journal of Cancer Research 4: 49 (Jan.) 1919.

1. Wedd, B. H., and Russ, S.: The Effect of Roentgen and Radium Radiations upon the Vitality of the Cells of a Mouse Carcinoma, J. Path. & Bacteriol. **17**: 1, 1912.
2. Kimura, Noriyoski: The Effects of X-Ray Irradiation on Living Carcinoma and Sarcoma Cells in Tissue Cultures in Vitro, J. Cancer Res. **4**: 95, 1919.
3. Krönig and Friedrich: Physikalische und biologische Grundlagen der Strahlentherapie; review in Fortschr. a. d. Geb. d. Röntgenstrahlen **26**: 208, 1919.
4. Seitz, L., and Wintz, H.: I, Grundsätze der Röntgenbestrahlung des Gebärmutterkrebses und des Karzinoms im allgemeinen; die Karzinomdosis, München med. Wchnschr. **65**: 89, 1918; III, Die Röntgenbestrahlung der Genitalsarkome und anderer Sarkome und ihre Erfolge; die Sarkomdosis, ibid., p. 527.

and sarcoma "dose." These determinations were, it is stated, made on human carcinoma and sarcoma, and the dose was determined by Krönig and Friedrich as "the amount causing shrinkage of a carcinoma nodule." This is slightly less than a skin erythema dose, employ-

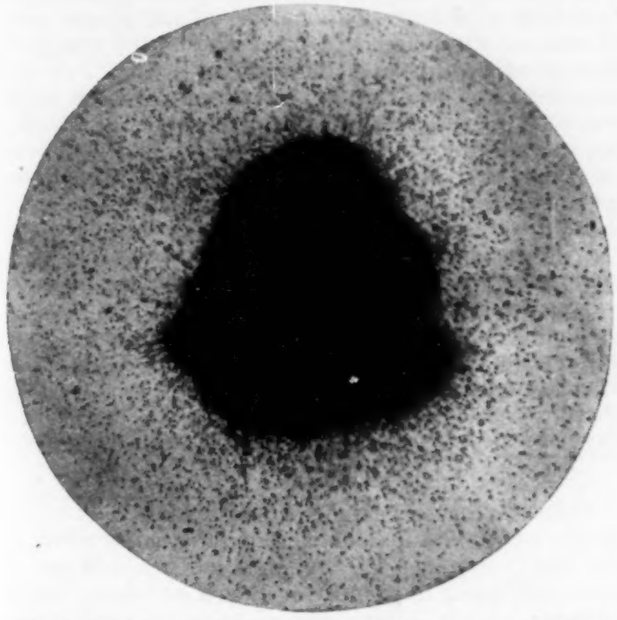

Fig. 3.—Tissue culture, sarcoma 180, exposed to four erythema doses of roentgen ray.

ing as they did 1 mm. of copper as a filter. Seitz and Wintz, using 0.5 mm. of zinc as a filter, found that the "carcinoma dose" is about 20 per cent. more than this. Such quantities of roentgen ray are about those which have for many years been known to be capable of causing the temporary disappearance of metastatic skin nodules of carcinoma of the breast with fair frequency. They are far below the amount required to affect primary growths of the same type. The latter authors state also that tumors vary in their susceptibility, a fact long known to every roentgenologist. They give their "sarcoma dose" as from 60 to 70 per cent. of that for a skin erythema; but their experience is confined to a few cases, and a wider knowledge will probably bring a realization of the fact that many sarcomas resist enormous doses of roentgen ray.

While the accurate estimation of roentgen rays with pastils of barium platinocyanid is difficult, if not impossible, they were, nevertheless, employed to furnish a rough approximation of the erythema dose. Graduated exposures over small areas were then made on the skin of the back of several patients, and the erythema dose for this region was obtained. This gives a universal biologic calibration of the amount of roentgen ray produced. The scale readings of a very sensitive galvanometer connected with an ionization chamber were then determined, and all conditions of current, voltage, distance, etc., were accurately recorded. With each series of experiments the apparatus was adjusted so that the same galvanometer deflections were again obtained. This is the easiest, simplest, and only satisfactory way with which we are acquainted of measuring the roentgen-ray output from a tube; and even though the results are probably not absolutely accurate, they are close enough for clinical work. The usual factors recorded, such as milliamperes through the tube, and the spark gap, give rise to errors, often as much as 20 per cent., with the same transformer and tube, owing to fluctuations in the commercial current supply and variations of an unknown sort in the transformer and its regulating connections. It was found necessary to install a storage battery to heat the tube filament, instead of the usual low voltage transformer, as fluctuation on the line caused the tube to give off very irregular quantities of roentgen ray as measured in the ionization chamber, even when the variations in the milliamperage through the tube were slight.[5]

Our intention was to establish on easily transplantable mouse tumors the lethal dose of roentgen rays of moderately short wave length produced from a tungsten tube at a voltage which gave an ample yield of energy including the K series of lines and the short wave length region above it, the softer components of the general radiation being removed by a filter of 3 mm. of aluminum. This is the filtration most generally used for deep therapy, although, since its employment was suggested by Elihu Thompson in 1896, no scientific determination has been published showing exactly the thickness most effective on cancer tissue. Our experiments show no practical difference due to length of exposure. If one-fourth the dose is given for four times as long, the lethal quantity is the same (Fig. 1).

The same tumors were used in these as in previous experiments undertaken in this laboratory with radium instead of roentgen ray,[6] i. e., mouse sarcoma 180, Crocker series, and mouse carcinoma 11, Crocker series. In addition, mouse embryo kidney was used, this offering a normal tissue as a check on the biologic effects of the rays. Sarcoma 180 is a rapidly growing, large cell sarcoma with but little interstitial tissue. It almost never undergoes spontaneous recession. Carcinoma 11 is a breast carcinoma of a medullary type, occasionally receding.

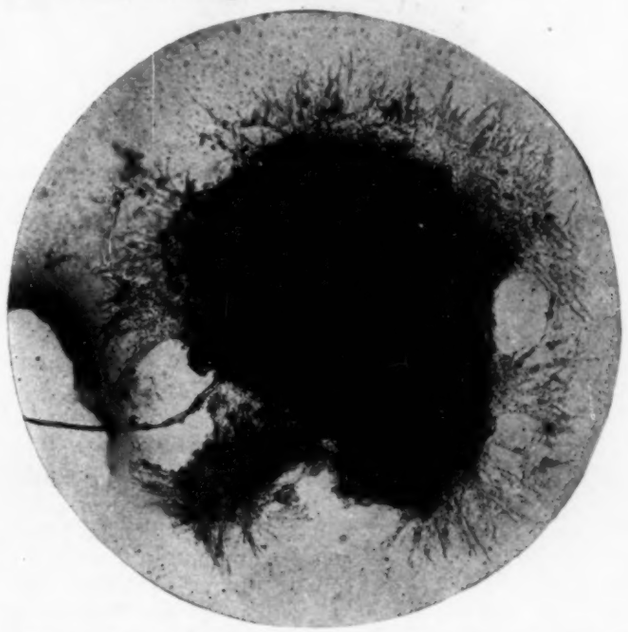

Fig. 4.—Tissue culture, mouse embryo kidney, exposed to three erythema doses of roentgen ray.

In order to avoid the errors due to random fluctuations which occur when too small a number of animals

5. We are indebted to Prof. William Duane of Harvard University for valuable advice in connection with the ionization apparatus, which is of his design (Duane, William: J. Cancer Res. **4**: 72 (Jan.) 1919).
6. Wood, F. C., and Prime, F.: The Action of Radium on Transplanted Tumors of Animals, Ann. Surg. **62**: 751, 1915.

is used, from fifty to seventy-five animals, and often more, were inoculated in each series of experiments.

The tumors and the kidney tissue were removed under rigid aseptic precautions and cut into small pieces, averaging about 0.001 gm. in weight. These were moistened with a drop of Ringer's solution and placed in hollow slides divided by a small ridge of paraffin, on one side of which was the tissue and on the other a drop of Ringer's solution to prevent any drying of the tissue while undergoing treatment. The slides, which had been ringed with petrolatum, were then sealed by a cover glass, from 0.15 to 0.18 mm. in thickness, and another paraffin ring.

At the end of each exposure, half of the tumor tissue was inoculated into mice, and from the remainder in vitro growths in plasma were made. Control tumor series were made at the same time from unrayed tissue, and these also were inoculated into mice and grown in vitro. For the in vitro cultures a mixture of mouse serum and chicken plasma was used. Blood was drawn with a syringe from the heart of a mouse,

Fig. 5.—Tissue culture, mouse carcinoma 11, exposed to four erythema doses of roentgen ray.

without killing the animal, and the serum, after being allowed to separate, was diluted with Ringer's solution in the proportion of one part of serum to two parts of Ringer's solution, and to this mixture was added chicken plasma, one part to seven of the serum solution. The piece of tissue to be grown, either control or radiated, was placed in the center of a cover glass, and a drop of the serum-plasma mixture was added and spread out evenly with a needle; the cover glass was then inverted over a hollow slide which had previously been ringed with petrolatum, and in the bottom of which there was a drop of Ringer's solution, and the slide was finally ringed with paraffin. The series was incubated at 37 C., and observations were made at the end of twenty-four hours.

With the type of rectifying transformer employed, eleven minutes were required to produce an erythema reaction on the skin of the back of a human being at a distance of 23 cm. from the anticathode of a Coolidge tube, with 3 mm. of aluminum as a filter, while 5 milliamperes of current were used with a 21 cm. spark gap, an amount equivalent to five Holzknecht units measured at skin distance, or twenty at half the distance. That such pastil readings have no biologic value may be judged from the well known fact that the color produced varies with the wave length of the roentgen ray used. For example, when the ionization chamber is employed, the deflections with the tube running as above were 160 mm. without a filter, and 55 mm. with 3 mm. of aluminum. In other words, the energy as measured by the ionization was as 1 to 3. A skin erythema was produced in ninety seconds and in eleven minutes, respectively, or in a proportion of about 1 to 7, while the pastil at 21 cm. required six minutes to reach teinte B with unfiltered rays, and eleven minutes with the filtered, a proportion of less than 1 to 2. Hence, statements like the one made by Wetterer[7] that carcinoma is injured by a dose of three Holzknecht units is not only vague in form, but untrue unless the very softest rays are employed.

The pastil readings were finally made on a Cox radiometer, the Hampson and Holzknecht apparatus being found less satisfactory for our purposes. This, therefore, was the quality and quantity of roentgen ray used in the exposures, the time alone being varied.

SARCOMA

When sarcoma tissue was inoculated into mice immediately after exposure, it was found that when roentgen ray had been given for five, eight and ten minutes (a dose insufficient to produce erythema on human skin), and for twelve, fifteen and eighteen minutes, there was no appreciable difference in the number of tumor takes in mice or in the rate of growth between the control and treated tissue. In tissue that had been exposed for twenty-five minutes or longer, a gradual change was noticed; there was a decrease in the number of tumor takes and also in the rate of growth, which was much retarded, until after sixty minutes of roentgen-ray treatment there were no takes except in one instance. In the series which had been exposed to the action of the roentgen rays for seventy minutes, one tumor, out of forty-four inoculations, appeared at the end of four weeks. Similar "escapes" were noted in the studies on the radium lethal dose, published in 1917.[8] There were no growths, however, among the grafts which had been treated for sixty-five minutes, nor among those treated for eighty minutes. It would seem, therefore, that in the majority of cases an exposure of between fifty-five and sixty minutes, or five or six so-called erythema doses, is usually sufficient to destroy the proliferative power of the cells of sarcoma 180, but not always, as is shown by the one growth appearing after four weeks, though the exposure in this case was from ten to fifteen minutes longer than was ordinarily required to kill all the cells. The percentage of grafts which grew after exposure to roentgen ray is graphically shown in Figure 2. As half the tumor particles did not grow after forty-five minutes, the broad assumption is permissible also that half the cells in the tumor would be killed by such exposure; it is, however, impossible to prove this.

SARCOMA TISSUE CULTURES

The tissues which were grown in plasma showed most interesting pictures. At the end of twenty-four hours there was a profuse growth in both the treated and the control tissue, which reached its maximum in

7. Wetterer, Josef: Handbuch der Röntgentherapie, nebst Anhang, Ed. 2, Leipzig, O. Nemmich, 1913, p. 177.

8. Prime, Frederick: Observations on the Effects of Radium on Tissue Growth in Vitro, J. Cancer Res. 2: 107 (April) 1917.

about forty-eight hours. There was but little difference in the extent or character of the growth, whether irradiated or not, and even in the tissue which had been treated with roentgen ray for forty-five minutes there was always a profuse outgrowth of cells (Fig. 3). These outgrowths were carefully removed, and some were fixed in Zenker's fluid and stained with Delafield's hematoxylin, while the rest were inoculated into a series of mice. Tissue treated up to twenty-five minutes grew as did the controls; whereas after twenty-five minutes of irradiation the number of takes and the rate of growth diminished, until after forty-five minutes' exposure no growth occurred. Of the sections which were stained, some were studied just as they were fixed, and others were cut in serial sections. Mitotic figures in the nuclei were found to be very scarce, though some of the treated tissue in which no mitoses were found grew well. The finding of mitotic figures was not, therefore, always an indication of the power of the tissue to grow when inoculated into mice. The probability is that as cells are much more sensitive in the mitotic phase, only those in the resting stage survived and were able to grow.

CARCINOMA

When mouse carcinoma tissue was exposed to roentgen ray in the same fashion, the results were slightly different. The tissue planted in vitro never gave rise to such profuse growths as arose from the sarcoma and kidney tissues (Fig. 5). The tissue was perhaps slightly more susceptible to the influence of roentgen ray than was sarcoma, and after an exposure of twenty minutes showed a diminution in its growth rate and in the number of takes when transplanted into other animals. An exposure of fifty minutes was required, however, before most of the tissue was killed, and even then there were two belated growths which appeared after the third week, showing that it is impossible, even when small pieces of tissue are treated, always to be sure of killing every cell, even though five erythema doses are given (Fig. 6). It should be remembered that neither roentgen ray nor radium kills the cells subject to its influence in a rapid manner. No doubt many of the cells exposed functionate for a few days, and spread out in culture in ameboid movements even when a dose which will ultimately be lethal has been administered.[9]

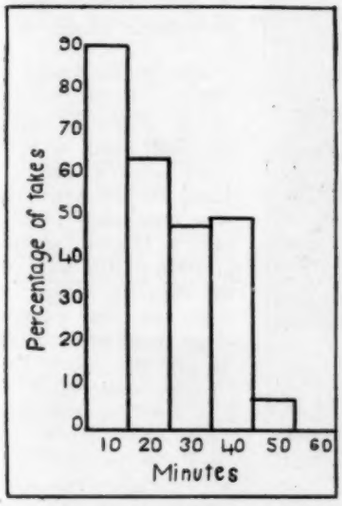

Fig. 6.—Results of exposure of carcinoma 11 in vitro to roentgen ray, 85 kilovolts, 5 milliamperes strength, at 23 cm. distance, with 3 mm. aluminum filter.

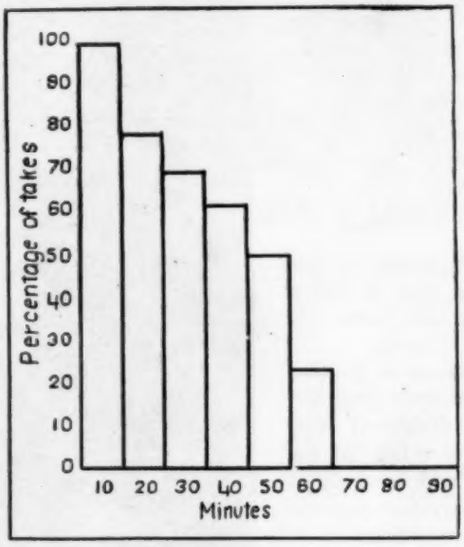

Fig. 7.—Results of exposure of sarcoma 180 in vivo to roentgen ray, 85 kilovolts, 5 milliamperes strength, at 23 cm. distance, with 3 mm. aluminum filter.

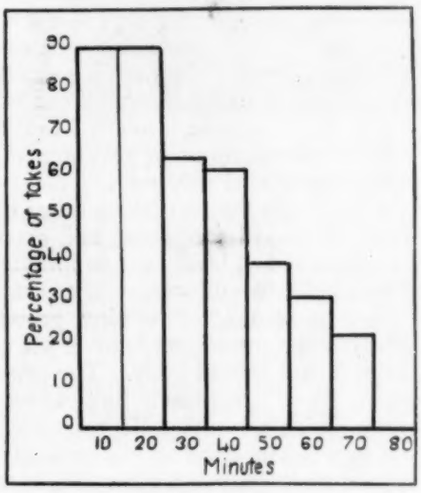

Fig. 8.—Results of exposure of carcinoma 11 in vivo to roentgen ray, 85 kilovolts, 5 milliamperes strength, at 23 cm. distance, with 3 mm. aluminum filter.

NORMAL CELL CONTROLS

When mouse embryo kidney was used, the embryos were removed by operation as near term as possible. The kidneys were excised from the embryos and then treated in the same way as was the tumor tissue, except that no animal inoculations could be made. With this tissue there was a profuse growth, chiefly of connective tissue, in all the in vitro cultures which had been exposed to roentgen ray even up to forty-five minutes; beyond this, however, no growth took place (Fig. 4). No noteworthy difference could be observed between the treated tissue and the controls, except that after an exposure of twenty minutes to roentgen ray the growth was not quite so profuse as in the controls. There is, therefore, but little difference in the roentgen-ray sensibility of rapidly growing normal connective tissue cells and that of sarcoma cells. Clinically, fibrosarcoma is much more resistant than granulation tissue, while lymphosarcoma is more sensitive; hence, in estimating the radiosensibility of human tumors the histologic type should always be known.

TUMORS EXPOSED IN THE ANIMAL

In order to determine whether the effect of roentgen ray on these tissues was influenced by the removal of ionization products and by a constant supply of fresh food to the cells, such as occurs when the tumor remains in the host, a number of mice bearing well developed tumors of sarcoma and carcinoma were enclosed separately in a small box and exposed to similar doses of filtered roentgen ray over periods varying from ten to ninety minutes. At the end of the treatment, the animals were killed, the tumors were removed under the usual aseptic precautions, and fragments from the portion of the tumor nearest the tube were inoculated through a hollow needle into a series of mice. The only difference in filtration was, therefore, the use of a millimeter or so of skin, instead of the thin cover glass used in the in vitro tests. It was found that fragments of sarcoma 180 which had been thus exposed for ten or fifteen minutes showed good

9. Prime, Frederick: Action of Radium on Embryo Heart Muscle, Proc. New York Path. Soc. **16**: 56, 1916.

growth when transplanted into other mice; but after the animal bearing the tumor had been irradiated for twenty minutes there was noticed a slowing in the growth rate of the tumor after inoculation, which gradually increased until after sixty minutes there was no growth at all (Fig. 7).

When carcinoma 11 was exposed in vivo and then transplanted into other mice, it was found that slightly longer exposures to roentgen ray than in the case of sarcoma were required before any effect was shown on the growth of the tumors after inoculation. After sixty-five minutes' exposure the appearance of the tumor was delayed, but showed fair growth; and it was not until after an exposure of seventy minutes that no growth resulted (Fig. 8).

CONCLUSIONS

1. Approximately four erythema doses of roentgen ray, given continuously and filtered through 3 mm. of aluminum, are required to kill mouse carcinoma, and five to kill mouse sarcoma exposed in vitro; but occasionally some cells may escape the effects of even six doses.

2. Approximately six erythema doses of roentgen ray are required to kill sarcoma cells in vivo, as compared to five required to kill the same cells in vitro; and approximately six erythema doses are required to kill carcinoma cells in vivo, as compared to four required to kill the same cells in vitro.

3. The in vitro outgrowth from sarcoma tissue after four erythema doses of roentgen ray produced tumors when inoculated into mice.

4. At least five erythema doses of roentgen ray are required to kill carcinoma and sarcoma cells in tissue cultures, and at least four to kill embryonic connective tissue cells in cultures.

5. The amount of in vitro growth is no indication whether the tumor cell is or is not capable of proliferating in the animal body. The growth observed after lethal doses is evidently due to the slow action of the rays, which permits cells potentially dead to wander out into the medium and to complete a division process before their growth momentum is finally checked.

6. Absence of mitotic figures after roentgen ray treatment is not an indication of lack of ability of the cells to grow in the animal body.

7. The practical conclusion which may be drawn from these observations is that the amount of roentgen ray necessary to kill all the cells of a rapidly growing, very cellular, and highly malignant sarcoma or carcinoma in man is between five and seven erythema doses of filtered roentgen ray when the tumor is on the surface of the body. Every centimeter of tissue that covers the tumor makes an additional amount of roentgen ray necessary. For example, when slices of fibroid uterus are used as absorptive material, the galvanometer deflections show that at a depth of 2 cm. 19 per cent. more roentgen ray is required; at 5 cm. depth, 47 per cent. more, and at 10 cm. depth, 65 per cent. more. While many tumor cells may possibly be slowed in their progress and mitotic forms killed at such depths, it is doubtful whether all can be destroyed. The basal-cell tumors and the lymphosarcomas are, as is well known, much more susceptible to radiation. Small, superficial, metastatic carcinomas are also, in some instances, more susceptible than is the primary tumor.

1145 Amsterdam Avenue.

DISLOCATION OF THE CARPAL SCAPHOID AND SEMILUNAR BONES

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Dislocation of the carpal bones is a rare occurrence. A review of the literature shows that only very few cases of dislocation of the carpal bones have been reported. Inquiry among my orthopedic colleagues revealed that many of them had not seen a single case, while others had seen one or at most two cases during their entire experience. Fracture of the scaphoid, however, has been seen frequently, and there are a fairly large number of cases reported.

The two cases described below are reported, first, because of the rarity of the condition, and secondly, because a good functional result was obtained in the one case by operative removal of the dislocated bones, and in the other case by conservative treatment alone.

Fig. 1 (Case 1).—Dislocation of scaphoid and semilunar of left wrist, lateral view.

REPORT OF CASES

CASE 1.—*History.*—H. B., a laborer, aged 21, fell from a fifth story window and injured his left wrist. It was impossible to obtain a history of the position of the hand at the time of injury. I first saw the patient about seven weeks after the injury. At that time, he complained of pain, swelling and disability of the left wrist, hand and fingers. The left hand and wrist were moderately swollen, the swelling being especially marked over the front of the wrist, where a mass of bone was easily palpable. This mass was directly under the skin, and was freely movable in the lateral but not in the vertical direction. The styloid processes of the ulna and radius were in proper relationship. There was no tenderness or discoloration of any part of the wrist. The back of the wrist was moderately swollen, and palpation did not reveal any hollow. There was no voluntary motion in the wrist, but there was a passive flexion of about 20 degrees, and a few degrees of abduction and adduction. The fingers were not swollen but were in a flexed position, and their motion was much restricted. Forced extension of the fingers was painful. The grip was so weak that the patient could not hold even a light object. There were no sensory disturbances in the hand or wrist. The color of the hand and fingers was normal. The radial and ulnar pulses were present, and were easily palpable.

Examination.—A lateral roentgenogram of the wrist showed a dislocation of the scaphoid and semilunar bones upward and forward to a position anterior to the ulna and radius, as shown in Figure 1. The scaphoid was entirely above the radiocarpal joint line, while at least two thirds of the extent of the semilunar was above this line. The lower pole of the semilunar was also fractured. It is interesting to note

that these bones were entirely separated from the radius and other carpal bones: they had evidently torn through the ligamentous and muscular tissue in front of the wrist joint, and had become entirely subcutaneous.

Treatment and Results.—On account of the very marked displacement of these dislocated bones from the wrist joint, we considered that reduction by manipulation would be impossible, and that the best treatment would be the operative removal of them. Accordingly an anterior vertical incision was made over the wrist joint and the lower part of the forearm. The bones were found embedded in the subcutaneous tissue, and were surrounded by what appeared to be a fibrous capsule which had evidently been formed about them since their dislocation. None of the flexor tendons or the nerves on the front of the wrist joint were exposed.

Figures 2 and 3 are roentgenograms taken after the operation and show the appearance of the wrist minus the scaphoid and semilunar bones. This patient has been receiving baking, massage, manipulation of the wrist and exercises, and the function of the wrist and hand is rapidly improving. The mobility of the fingers has gradually increased, and he is now able to grasp and hold a 5-pound dumb-bell. The progress in the improvement since the operation has been continuous, and encourages us in the belief that the function may ultimately be normal. This is especially interesting in view of the serious disturbance of the wrist joint by removal of two of its component bones.

Fig. 3 (Case 1).—Lateral view of left wrist after removal of dislocated scaphoid and semilunar.

CASE 2.—*History.*—M. O., man, aged 35, was thrown from an automobile, injuring his right wrist. Immediately following the injury the wrist became moderately swollen, painful and tender. The fingers were held flexed and were greatly restricted in their mobility. This man had suffered so many other and more serious injuries at the time that very little attention was paid to the wrist until several weeks after the accident, when the persistent swelling, tenderness, pain and disability led to the taking of a series of roentgenograms. It is interesting to note that a roentgenogram of the wrist was taken a few days after the injury, a diagnosis of Colles' fracture was made, and reduction was attempted.

Fig. 4 (Case 2).—Dislocation of semilunar of right wrist.

Fig. 2 (Case 1).—Anteroposterior view of left wrist after removal of dislocated scaphoid and semilunar.

Examination.—Our roentgenograms show very definitely, as is seen in Figure 4, that the semilunar bone had been dislocated forward. The bone appears as a three-quarter moon, distinctly separated from and in front of the os magnum. It is rotated so that its inferior surface points downward and forward, and the superior surface points backward and upward instead of directly upward. The posterior border of the semilunar points downward, and the posterior half of the bone is in front of the os magnum. The upper articular surface of the os magnum almost touches the radius. The dislocation is not so complete as in the preceding case. In fact, it is only a partial dislocation or subluxation.

Originally the wrist was very much swollen and tender, and examination was not satisfactory. Several weeks after the injury when the swelling had subsided, palpation revealed a mass on the front of the wrist, and what was more interesting, a hollow in the middle of the back of the wrist. These findings are pathognomonic of dislocation of the carpal semilunar. There was a great deal of stiffness and pain in the wrist and fingers, and also numbness in the latter. Manipulation of the fingers was very painful There was some voluntary motion in the wrist and fingers, which increased as the swelling subsided.

Treatment and Results.—Manipulative reduction under an anesthetic was refused. In fact, as the motion was increasing, and the disability became less pronounced, it was felt that conservative treatment would yield a good result. The treatment consisted in baking, massage, gentle manipulation and graduated exercises. The improvement has been slow but continuous, until at the time of this report the patient has almost perfect use of the hand and fingers.

The patient lacks as yet the normal strength of the wrist and hand, but he can write and perform all the finer motions of the fingers. There is at present no disturbance of sensation. There is no pain in the hand, except occasionally, and then it is not severe. However, it is important to remark that the pain did last for many months, and very much longer than in the first case in which the dislocated bones were removed.

1 West Eighty-Fifth Street.

THE TOURNIQUET

A MODIFICATION OF AN INSTRUMENT EMPLOYED BY THE GERMANS IN THE LATE WAR

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After the Germans had evacuated the Saint Mihiel salient, a metal tourniquet of unusual design was found in one of their advanced post surgical hospitals by Lieut.-Col. J. M. Flint and Lieut. A. Dayton.

The instrument was made on the principle of the clamp: both arms were of rounded steel and covered with rubber tubing. It was given to me for trial in Mobile Hospital No. 39, and I had the opportunity to use it many times. At first the tourniquet was found to be unsatisfactory because the construction of the handles was clumsy, and the blades separated widely when tightened over the limb, thus failing to control bleeding. In order to obviate this, it was necessary only to cross the arms of the instrument during compression.

There were two sizes, one for the arm and one for the thigh. When properly applied I found this tourniquet simple to adjust, safe in its effect on the tissues, definite in its control of bleeding, and very adaptable for the purpose in operations on the upper and lower extremities.

AUTHOR'S MODIFICATION OF GERMAN TOURNIQUET

The instrument was sent to the office of the chief surgeon, and I did not see it again. However, the principle of the design was readily recalled, and I had one made by Codman and Shurtleff of Boston, as shown in Figure 1. It is the German instrument modified in several details that I found unsatisfactory. The arms of the new instrument are heavier and so shaped as to pass over the thigh more readily and to cross in closing about the limb (Fig. 2). The joint is strongly made, and the handles are given a direction which brings them nearly parallel when the tourniquet is applied. An oblong slot is made in the center of one handle, through which passes the adjustment screw. This part of the instrument is slightly curved so that when the thumb nut is firmly adjusted with the tourniquet in position, the adjustment screw may be shifted forward releasing compression, and back again for renewed control of hemorrhage, should that be necessary (Fig. 3). The fact that this release of compression can be made without releasing the thumb nut gives one an opportunity in a simple manner to examine the stump quickly for vessels that have not been ligated, or momentarily to allow blood to enter the limb during other operations that are more prolonged.

Fig. 1. Modified tourniquet.

NECESSITY OF CONTROLLING HEMORRHAGE

Surgeons in all periods of history have sought the most efficient means of restraining hemorrhage. From the exigencies of war have come the multiplicity of measures and apparatus of which we have knowledge. When one realizes that three fourths of those who die on the battle field perish from hemorrhage directly, or from shock as a result of excessive loss of blood, it is evident why the problem has demanded the utmost thought and consideration in all ages.

Tourniquets employed in civil practice are almost without exception the products of war, or ideas which have arisen from the study of military surgery; and now that the greatest war of all times is passing into history, it is logical that surgical thought should become more accurately focused on the causes of surgical failures in the field and on a study of the principles thus learned so far as they apply to surgery in civil life.

It is common knowledge that nature stops hemorrhage from small vessels and not infrequently from arteries of large caliber. This is brought about by the natural process of retraction of the severed ends into the surrounding cellular tissue, and by contraction of the circular fibers so as to diminish the caliber of the vessel. In bleeding from vessels of large size, this process is not sufficient. The blood then becomes coagulated in the cellular sheath. By diminishing the area of the sheath and producing increasing pressure on the open artery, the flow of blood is retarded, allowing coagulation to continue both within and without the artery, thus closing the end of the vessel.

It is well to remember that air favors coagulability of the blood and contraction of the vessels. Thus, internal hemorrhage from vessels of moderate size is more often fatal than bleeding from vessels of the same size which are near the surface of the body. Syncope delays hemorrhage from superficial vessels, but it may recur on the return of normal blood pressure, so that such liability should not be overlooked.

It is generally known that in full flight a bullet may divide an artery like a knife, and fatal hemorrhage may ensue, and that when a large vessel is divided by a sharp instrument the loss of blood is massive, continuous and usually fatal unless the bleeding from the artery is promptly blocked by clotting of the blood between the vessel and the skin. Then pressure causes cessation of hemorrhage as just described. On the other hand, the immediate loss of blood may be only slight when complete division of the vessel is produced by a projectile, or by a spent ball tearing its way through the vessel walls. When an artery thus divided contracts, its torn intima is brought together at several points, thus aiding the formation of a blood clot. MacLeod[1] remarks:

> A considerable artery may be fairly cut across and give no further trouble beyond the first gush of blood which takes place at the moment of injury. In such cases the vessel contracts and closes itself. If only half divided, as it is apt to be by a shell or the quick passage of a ball, then the hemorrhage will be in all probability fatal.

1. MacLeod, G. H.: Notes on the Surgery of the War in the Crimea, London, John Churchill, 1858.

DEVELOPMENT OF THE TOURNIQUET

Among the artificial methods of arresting hemorrhage, the tourniquet has been employed almost universally since the French surgeon, Morel, first applied his own invention of it at the siege of Besançon. It consisted of three parts: (1) a yard and a half of strong worsted, an inch broad; (2) a pad of leather, tightly stuffed with horsehair having a loop on one side of the band to slide through, and (3) a piece of strong leather having two apertures an inch apart through which the band or ligature is passed. This tourniquet was made on the principle of creating the maximum pressure over the vessel by the use of a pad, instead of a strong general pressure around the limb as produced by a rubber bandage or elastic ligature. The latter was the method commonly used by the American forces in the recent war. All other tourniquets in use are simply modifications of the original instrument of Morel. Petit's tourniquet was the Morel appliance with a screw adjustment, a strap, a buckle and a compress. In addition there was a clamp, or horseshoe tourniquet, Dupuytren's compressor, Chariere's tourniquet, Skey's, Moore's, Tyrell's, Lambert's, and the like.

The field tourniquet employed in the Civil War was a sort of "garrot" or "Spanish windlass" and did not differ materially from that used in former wars. S. D. Gross[2] thus wrote on this topic:

> It is not necessary that the common soldier carry a Petit's tourniquet, but every one may put into his pocket a stick of wood 6 inches long and a handkerchief or a piece of thick compress and be advised how, when and where they are to be used. By casting the handkerchief around the limb and placing the compress over the main artery he can by means of the stick produce such an amount of compression as to put at once an effectual stop to the hemorrhage. This simple contrivance, which has been instrumental in saving the lives of thousands, constitutes what is callel the "field tourniquet." A pipe, knife or ramrod may be used if no special piece of wood is at hand.

The tourniquet of Petit was widely employed in civil practice, and is still used today in many French hospitals.

Fig. 2.—Side view.

DISADVANTAGES OF MOST TOURNIQUETS

Whenever a wounded soldier was brought to our operating room in France with a tourniquet firmly applied, I was apprehensive always about the vitality of the limb and its capacity to resist infection. I believe that this feeling was shared by most surgeons who were operating in the advanced zone of the army. This attitude prevailed among surgeons of the Civil War, for Prof. Charles A. Lee[3] stated that a brigade surgeon who was at the Battle of Bull Run, where more than 2,000 were wounded, informed him that the use of the field tourniquet was so frequently followed by mortification and loss of the limb that he had come to the conclusion that it was far safer to leave the wounded to nature with no attempts to arrest the flow of blood, than to depend on the common army tourniquet.

The firm application of a tourniquet for more than an hour usually meant trouble of some sort, either an intolerable degree of pain, imperfect retraction of the muscles after amputation, phlebitis, infection or gangrene, so that in some areas on the western front anything more than the temporary use of the tourniquet to control profuse bleeding was prohibited. Many of the tourniquets which I had occasion to observe on wounded soldiers were too tight or too loose or very difficult to release without removing the appliance entirely.

ADVANTAGES OF THE METAL TOURNIQUET

The metal tourniquet obviates the dangers incurred by the use of the elastic band, the elastic ligature or the various forms of a windlass control. Simply by shifting forward the adjustment screw, releasing the compression and allowing blood to enter the limb for a few seconds, at short intervals, this tourniquet may be carried effectively and without danger for many hours. It is obvious that the ordinary soldier could not be burdened with this instrument, but it could go with the stretcher bearers and be provided in every advanced dressing station.

The same principles govern the use of compression for restraining hemorrhage in war as in civil surgery where some form of the elastic ligature is the appliance now most popular in use. When applied, such a tourniquet is generally too tight or too loose, the degree of compression depending on the strength and will of the individual adjusting it. Its application should be the last thing done before the incision is made, and it should be released as soon as the main vessels are taken up by hemostats. But the tourniquet is frequently put on before the surgeon is ready to operate, and once applied it is easily forgotten during the exigencies of an operation. A nurse can be instructed readily in the management of the metal tourniquet, and in operations other than quick amputations she will release the compression for ten seconds every ten minutes by shifting the adjustment screw forward, and the operation may proceed for from one to two hours with only slight inconvenience to the operator and complete safety to the vitality of the limb. The duties of the nurse in the management of the tourniquet are definite, and the same degree of reliance can be placed on her intelligence for this purpose as we have learned to accord her in the administration of anesthesia.

The metal tourniquet should be sterilized with the other instruments. With the prepared area extended to Poupart's ligament and the gluteal fold, the instrument is placed in position within the sterile field and over a folded towel which encircles the thigh. Immediately before the operation is begun, the leg is elevated and firm compression made by adjusting the thumb nut. Further management of the clamp has been referred to above. Rubber tubing may be used on the arms of the instrument, if desired.

Secondary hemorrhage, the bane of the surgeon in operations involving infection of the tissues contiguous to the larger vessels of the extremities, is not altogether a historic vision. It is relatively uncommon, but none

2. Gross, S. D.: Military Surgery, Philadelphia, J. B. Lippincott Company, 1862.
3. Lee, C. A.: A Description of the Elastic Tourniquet, New York, George F. Nesbitt & Co., 1862.

the less dreaded by surgeons of today, as it was by those of former times. Arterial ulcerations still occur as a result of erosion from mechanical irritation, compression for sequestrums in fractures, osteomyelitic foci, and prolonged contact with rigid draining tubes. Hemorrhage from these causes has no tendency to be arrested spontaneously.[4] When secondary hemorrhage occurs from a large vessel, little can be done in time to save life unless a surgeon is near by. Under such circumstances the average nurse can accomplish little with the elastic tourniquet. Before the patient is exsanguinated, the nurse must act swiftly with a simple and trusty instrument of compression. On such occasions the speed with which adequate compression can be applied decides the issue between life and death.

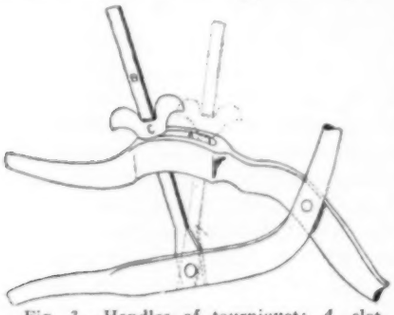

Fig. 3.—Handles of tourniquet: *A*, slot through which adjustment screw *B* passes; heavy lines represent adjustment screw holding clamp in position of compression with thumb nut *C* set; broken lines represent adjustment screw shifted and compression released.

"Simplicity, not complicity, of surgical instruments on service," though not a modern expression, is as truly the object to be aimed at today as it was many years ago when urged by Sir John Hall, inspector general of hospitals in the British army.

IODID AND BROMID PASTES AS USED IN ROENTGENOGRAPHY

PRELIMINARY REPORT

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Since Cameron[1] found that watery solutions of the iodids of sodium and potassium could be successfully used as opaque mediums in roentgenography, it has also been found at the Mayo Clinic that the bromids can be used to the same advantage. At present from 12 to 25 per cent. solutions of these salts are being used for cystograms and pyelograms. Similar solutions can also be used to great advantage for the injection of chronic tracts, sinuses, cavities and fistulas. A thin, watery solution, however, is difficult to retain long enough to obtain good roentgenograms.

With the idea of finding a suitable medium for injection purposes, I undertook a systematic study of various pastes for the incorporation of iodin and bromin containing substances. Organic compounds such as iodoform, eosin and erythrosin, which contain either iodin or bromin, are inferior to the simple inorganic salts.

IODIN OR BROMIN CONTENT OF VARIOUS COMPOUNDS

Table 1 expresses the percentages of iodin or bromin in the various substances used.

Theoretically, iodoform containing three atoms of iodin in each molecule should be opaque even in more dilute solutions. Practically, this is found to hold good, as a one-third molecular solution of iodoform in ether casts a shadow of the same density as a molecular solution of either potassium or sodium iodid. Owing to the fact, however, that it is insoluble in water and only sparingly soluble in fixed oils, it cannot be used to advantage. Iodoform emulsions can be prepared, but do not prove satisfactory.

Thymol iodid (aristol) was also found to be inadaptable on account of its insolubility and low iodin content (46.1 per cent.).

Water soluble salts of erythrosin (tetra-iodofluorescein), even though each molecule contains four atoms of iodin, are unsuitable for use on account of their relatively low percentage of iodin and because of their high cost. This also serves to show that complex organic compounds of high molecular weight contain a lesser percentage of iodin or bromin than simple inorganic salts, in spite of the fact that the former contain more halogen atoms per molecule.

Eosin is too low in bromin and too expensive to be used in stronger solutions.

The inorganic salts of bromin and iodin are superior to their organic compounds in every way. From the standpoint of opacity, the iodids are better than the bromids because iodin has an absorption value considerably higher than that of bromin. It follows that the iodids can be used in weaker solutions and consequently cause no more irritation than the stronger bromid solutions.

At present the bromids cost considerably less (68 cents a pound) than the iodids ($4.05 a pound).

STRENGTH OF PASTES USED

When comparing various substances as to their absorption values, molecular solutions are used. For routine use, percentage solutions are preferable.

In the test tube, an alcoholic solution of iodin crystals, less than 5 per cent. in strength, does not cast a well defined shadow. For this reason a solution of an iodid should contain more than 5 per cent. of combined iodin to be sufficiently opaque. Thus, a 10 per cent. aqueous solution of sodium iodid contains 8.46 per cent. of combined iodin and casts a good shadow.

For the injection of chronic sinuses, etc., it is well to keep well above these limits. Iodid pastes can be made to vary from 15 to 30 per cent., and bromid pastes from 25 to 40 per cent. in strength. For routine use, a 15 per cent. iodid or a 25 per cent. bromid paste is sufficient.

TABLE 1.—PERCENTAGE OF IODIN OR BROMIN IN VARIOUS SUBSTANCES USED

Potassium iodid (KI)	contains 76.4%	iodin
Sodium iodid (NaI)	contains 84.6%	iodin
Iodoform (CHI_3)	contains 96.8%	iodin
Dithymol-iodid ($C_{20}H_{22}O_2I_2$)	contains 46.1%	iodin
Potassium bromid (KBr)	contains 67.1%	bromin
Sodium bromid (NaBr)	contains 77.6%	bromin
Eosin ($C_{20}H_8O_5Br_4Na$)	contains 47.6%	bromin

PREPARATION OF PASTES

A serviceable paste should have these characteristics:

1. It should be nonirritating.
2. It must be thick enough at body temperature, to be retained when injected.
3. It must be free from small lumps as often it is desirable to pass it through a medium sized needle.
4. Its base should be water soluble so that it can be easily washed from an injected area.

4. Keen, W. W.: Surgery, Its Principles and Practice, Philadelphia, W. B. Saunders Company **5**: 86, 1909.

1. Cameron, D. F.: Aqueous Solutions of Potassium and Sodium Iodids as Opaque Mediums in Roentgenography: Preliminary Report, J. A. M. A. **70**: 754 (March 16) 1918.

5. It should be easily prepared and preserved.

I prepared pastes of starch, dextrin, acacia, Irish moss and tragacanth. Of these, the following were found to be serviceable:

The corn starch is suspended in the water and is then placed on the water bath. It is stirred continuously until a thick paste forms. The glycerin is then mixed in thoroughly. Glycerin forms a glycerid of starch and also prevents the surface film from forming when the paste cools. Now 15 gm. of an iodid or 25 gm. of a bromid are added. These go into solution readily without the addition of more water.

TABLE 2.—STARCH PASTE

Corn starch	10 gm.
Glycerin	16 c.c.
Water	100 c.c.

To preserve the paste and to render it unfit for bacterial growth when harbored in a tract, 0.5 c.c. of pure phenol or 1 c.c. of a volatile oil, such as oil of thyme, is incorporated. To help the surgeon in following out the tract at the time of operation, the paste is colored a deep blue with a solution of methylene blue.

The moss is first well washed in cold water. It is then placed in a beaker, the water is added, and the whole is placed on the water bath for fifteen minutes. It must be stirred frequently. The resulting mucilage is strained

TABLE 3.—IRISH MOSS PASTE

Irish moss	3 gm.
Glycerin	6 c.c.
Water	100 c.c.

through muslin and the glycerin is added. This mixture is then heated on the water bath until a thick, jelly-like paste is formed. Then the iodids or bromids and the phenol are incorporated as in the starch paste. This paste seems difficult to color.

The water is added to the tragacanth, and the mixture is stirred thoroughly and allowed to stand for twenty-four hours. Then the glycerin is mixed in. It is heated on the

TABLE 4.—TRAGACANTH PASTE

Tragacanth (powdered No. 1)	5 gm.
Glycerin	8 c.c.
Water	100 c.c.

water bath for about thirty minutes. This is sufficient to make a thick jelly-like paste. Then one proceeds as in the other pastes.

SUMMARY

1. The simple inorganic salts of iodin and bromin are better and less expensive than the complex organic compounds.

2. The starch paste is the most economical, is quickly prepared, and is very serviceable. If carefully prepared, it is free from lumps.

3. The pastes made from tragacanth or Irish moss are more elegant but are more difficult to prepare. The air bubbles found in these are driven off by heat.

3. All of these pastes are nonirritating, are easily injected, and can be removed from the injected area at once by a stream of warm saline solution, if desirable. In the latter respect they possess a decided advantage over oily preparations.

4. They are retained long enough to permit good roentgenograms to be made. If the opening of a tract or sinus is plugged with cotton after the paste is injected, the latter can be retained until operation.

5. The pastes can be sterilized in the autoclave before the phenol is added and can then be put into collapsible tubes for future use.

THE TONSIL IN RELATION TO INFECTIOUS PROCESSES *

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Some years ago when I became engaged in the study of focal infections, interest centered largely round joint and various rheumatic lesions, and the tonsil was receiving first consideration as the probable responsible focus and portal of entry. It early became clear that in order to justify many of the charges made against the tonsil, and to solve even some of the numerous problems arising in connection therewith, we were in great need of intensive studies on certain phases of the bacteriology and pathology of these organs. Even more, perhaps, than studies designed to relate infectious lesions in various localities to the tonsil as a focus, we needed fundamental studies on the bacteriology and pathology of these organs in normal persons. I wish here to present briefly certain studies along these lines.

DISTRIBUTION OF LYMPHOID TISSUE

An interesting point appears in connection with the distribution of lymphoid tissue in the throat and gastrointestinal canal in relation to the bacterial flora. It is well known that lymphatic nodes are so distributed as to protect the body against the absorption of dangerous matter from certain well-recognized sources. Indeed, lymphoid tissue occurs, generally speaking, only in those localities where such absorption is occurring. So we have the clusters of glands at the hilum of the lungs, in the mesentery, in the axillary and inguinal regions, etc.

In the alimentary tract from the lips to the rectum there are two localities where striking accumulations of lymphoid tissue appear, namely, in the region of the throat, and in the lower small intestine, especially about the ileocecal valve and appendix. The intervening localities, like the stomach, duodenum, etc., have lymphoid tissue, but it is irregularly distributed and far less in quantity. *A priori,* this would indicate excessive absorption of dangerous matter in the localities where lymphoid tissue is abundant, and as a matter of fact this appears to be true; for in the throat and in the region just above and below the ileocecal valve we find normally the greatest number and variety of bacteria. This can readily be shown by making smear and culture preparations at intervals along the alimentary canal. If one should represent the amount of lymphoid tissue along the canal by one curve, and the number of bacteria normally present by another, the two curves would in general parallel each other. Beginning at the mouth, the curves would rise rapidly, attaining a maximum in the pharynx; they would then descend in the region of the esophagus and stomach, only to rise again in the small intestine, gradually approaching another maximum about the ileocecal valve, and then decending somewhat toward the rectum, where many of the bacteria die.

PROTECTIVE MECHANISM OF LYMPHOID TISSUE

In the throat, the palatine tonsils represent the greatest single accumulation of lymphoid tissue, while in the intestine, the agminated follicles of Peyer and the appendix represent the same. The significance of these accumulations appears to be that of a protective mech-

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anism against various products of absorption, bacterial and other.

In these two localities, not only is the normal bacterial flora more highly developed, but here occurs the greatest number of infections: in the throat streptococcus, pneumococcus, meningococcus, staphylococcus infections, the viruses of numerous exanthems and other diseases; in the lower intestine, typhoid, paratyphoid, dysenteries, tuberculosis, appendicitis, etc. In the intervening localities, relatively few infections occur. The pathogenic organisms attack primarily the lymphoid structures or, at any rate, the parts rich in lymphoid tissue. It would appear that in many instances these organisms become adapted to grow in lymphoid tissue—in other words, to attack the very mechanism which the body has apparently designed for protection against bacteria. Striking examples of this are the hemolytic streptococcus infections in the tonsil and typhoid infection of Peyer's patches. Lymphoid tissue thus may not be equally protective against all bacteria. In certain infections this mechanism breaks down entirely, and instead of being protective it furnishes a fertile soil for invasion. It is on account of the prevalence of certain infections in this tissue that it may be of advantage to remove this mechanism, or a part of it, as is done in tonsillectomy and in appendectomy.

SURFACE AREA OF THE TONSILS

Another point of importance in connection with tonsil infections is the surface area involved, since this is one factor in determining absorption of bacteria and their products. The epithelial surface of the tonsils is many times increased on account of the branching crypts penetrating deeply into the organ. We have attempted to measure the total surface, and find that roughly in an average tonsil of 2 by 1.8 by 1 cm., the entire epithelial surface would amount to about 25 sq. cm. This is only an approximation. Tonsils vary markedly in size, as also in the number and size of crypts; in hypertrophied tonsils, the surface would be far greater than this. Furthermore, the surface epithelium is loose and spongy, the round cells penetrating the layers even to the surface, giving rise to the well known epithelial structure of the crypts, interpreted and spoken of as a physiologic wound. While the extent and nature of the surface are important factors in any infectious process, it is not usual for all parts of the tonsils to be involved equally. When making smears and cultures from the individual crypts in a given tonsil, one is struck by the variation in the number and the kinds of bacteria from them. Some swabs may be sterile, others may contain many bacteria; in microscopic sections of diseased tonsils certain parts of the organ, or more often certain crypts, may show marked exudation and change, other parts or crypts revealing little or no significant alterations.

PLASMA CELLS

The distribution of plasma cells in the body is suggestive in connection with infections of lymphoid tissue. Generally speaking, these cells in the body are indicative of chronic inflammation or irritation, and most writers regard them as pathologic cells, at least when found in appreciable numbers. They accumulate in masses about centers of chronic inflammation, and in general are characteristic of granulation tissue. They appear in many low-grade inflammations of the skin and mucous membranes.

The tonsils and crypts become infected at birth or within a few hours thereafter. Even pathogenic organisms very early appear, *Streptococcus pyogenes* having been noted as early as ten hours after birth. The flora of the infant mouth is largely streptococcal.

Using the local accumulation of plasma cells as a possible criterion of the absorption of bacteria or their products, I studied the time of appearance and the distribution of plasma cells in tonsils. About 240 pairs were examined for these cells. As a routine, the methyl green-pyronin stain of Pappenheim was employed. One hundred and eighty pairs had been extirpated from children and adults, and about sixty pairs came from necropsies on subjects of various ages ranging from fetuses to the very aged; seventeen were from infants less than 3 months old.[1]

The results briefly were as follows: These cells are not found in tonsils of the fetus or of the new-born. They make their appearance regularly about the second or third week, and are always found thereafter. In children several months old they are constantly found, usually in abundance. They are present throughout life and even to very old age (88 years) regardless of the anatomic condition of the tonsil. In pathologic tonsils, and especially in hypertrophy, they are very numerous. They occur under the epithelium of the crypts along the strands of connective tissue, and clustered about small blood vessels.

In view of the rôle that these cells play in general pathologic processes, and since they occur so regularly in tonsils a short time after the entrance of bacteria, one is led to suggest that their presence here indicates a chronic infection focus where absorption of irritating products is constantly occurring. Aschoff has noted the same facts in connection with the appendix. Along the entire gastro-intestinal canal, too, one observes large numbers of plasma cells under the mucosa and especially in the region of lymphoid follicles. These facts are quite in harmony with the observations made by Adami and others on the more or less constant penetration of the mucosa by organisms and termed "subinfection." No doubt many bacteria are constantly passing through the alimentary wall into the lymphatics and blood stream, there to be disposed of in different ways. To these bacteria and their products after penetrating the epithelium, the plasma cells probably offer the first barrier or line of defense. In the sense, therefore, that the term subinfection has been used in connection with the condition of the so-called normal tonsil, or in the sense in which Aschoff uses the term "chronic inflammation in the appendix," we may regard all tonsils as chronically inflamed a short time after birth. One should, however, interpret rationally such findings in tonsils; and when the terms are used as above they should not necessarily convey the idea of a dangerous or serious pathologic state requiring surgical intervention. Nor should they be interpreted as a focus of infection in the sense in which that term is now commonly used.

BACTERIAL FLORA OF TONSILLAR CRYPTS

The statement is often made that the flora of the tonsils and the crypts is abundant and varied. This does not appear to be true. By no means will any or every germ that enters the tonsil live and develop there. Recently, in our laboratory, Miss Sexsmith tested the viability of a number of organisms in the crypts. After

1. Further details are given by the author in the Journal of Infectious Diseases **10**: 142, 1912.

careful cultures of a crypt for control purposes had been made, a few drops of a live bacterial suspension were injected into it by means of a curved blunt needle. Daily cultures then were taken of the crypt. *Bacillus prodigiosus* after injection gradually became less numerous, and at the end of the fourth day had completely died out. Injection of *B. pyocyaneus*, a pathogenic chromogen, caused a slight reaction in the throat lasting a day or two. The organisms gradually diminished in number, and by the fifth day had disappeared. *B. coli* will likewise disappear in the course of a few days. It is evident from these data that certain bacteria, even those well adapted to grow in certain parts of the body, will not flourish in the tonsillar crypts. In other words, it is not proper, as has been done, to look on the tonsil crypts as a cluster of culture tubes set in the upper part of the alimentary canal, growing numerous varieties of bacteria and discharging them into the lumen. As we shall see, the flora of the tonsils is a highly specialized one, restricted quite definitely to a few varieties.

From the anatomic structure of the tonsils, one might expect organisms requiring varying degrees of oxygen tension to thrive here. A few years ago I reported some work on the so-called actinomyces-like bodies often found in the crypts.[2] Since then, further work has confirmed the observations made at that time. These bodies are found in 30 per cent. or more of tonsils, and are composed of three kinds of organisms evidently growing together in symbiosis: fusiform bacilli, spirochetes and streptococci. The fusiform bacilli grow under anaerobic conditions, and in the crypts develop into a cluster of filaments, forming a central stalk about which the fusiform rods are arranged perpendicularly, closely resembling the structure of a test tube brush. Scattered throughout this growth are very large numbers of spirochetes, actively motile. The streptococcus forms in these masses have recently been studied in detail by Pilot and myself. There are hemolytic and nonhemolytic varieties. The hemolytic are aerobic and quite like the varieties that occur commonly in the throat. Many of the nonhemolytic streptococci from these granules are distinctly anaerobic when first cultivated. They exhibit a green halo on blood agar plates, and if the initial cultures are not made anaerobically they will not appear. After a few transplants under aerobic conditions, however, they will adapt themselves to grow equally well in the presence of oxygen. This anaerobic property of the green strains is very definite and is readily discernible in the first series of cultures. According to Holman's classification they belong to *Streptococcus mitis* and *Streptococcus salivarius* varieties. They are not highly virulent for rabbits, being comparable in this respect to the ordinary *Streptococcus viridans* of the buccal mucosa.

Fusiform bacilli.—B. fusiformis occurs in the crypts either in the granules as above described, singly or in small, loose, irregular clusters. In either form they are probably found in all tonsils at some time or other. They appear quite like the bacilli occurring about the teeth. I am inclined to the view that the crypts are the normal and usual habitat of these bacilli. From here they readily infect the mouth, especially the teeth, when these are not properly cleansed or are decayed or pyorrheic.

The possible relation of these bacilli to the infections included under the term Vincent's angina is interesting. A preparation from a Vincent lesion is indistinguishable from one made from a tonsil granule. On the tonsil, Vincent's angina often begins about the mouth of the crypts, and may involve the sides. The question arises whether or not the fusiform bacilli of the tonsil crypts are a common source of the organisms in Vincent's angina, the crypts serving as the primary breeding grounds for them. These bacilli, together with streptococci, are a common cause of brain abscess resulting from bronchiectatic cavities in lungs, where these bacilli find favorable conditions for development. Presumably they pass down to the bronchi from the tonsils or teeth. Brain abscesses have followed tonsillectomy.

Streptococci.—Some years ago when studying the bacteriology of extirpated tonsils from certain cases of chronic infection, I noted a striking difference between the surface flora and the crypt flora of tonsils.[3] On the surface the predominant organisms were of the *Streptococcus viridans* type, whereas the predominant organisms in the crypts of the same tonsil were as a rule hemolytic streptococci. The exceptions were few. The difference was so striking that at first I attributed great significance to this point, since the hemolytic varieties are so much more virulent as a rule than the green varieties. Later I found that most tonsils, regardless of the associated condition, contained a similar flora. Hypertrophied tonsils especially, but also others that show no noteworthy pathologic condition, reveal the same distribution of the varieties of streptococci on the surface and in the crypts. Pilot in our laboratory recently also examined 100 tonsils, extirpated chiefly for hypertrophy, though many were normal in size. Hemolytic streptococci were found on the surface in 61 per cent.; they comprised usually less than 10 per cent. of the total number of bacteria. In the same throats from which these tonsils were removed, cultures taken just before extirpation yielded 43 per cent. positives. Crypt cultures yielded 97 per cent. positives, and in almost all the hemolytic variety was greatly predominant. Furthermore, in another series of twenty-four normal persons, cultures from the throat and pharynx yielded hemolytic streptococci in 58 per cent.; in nineteen persons without tonsils, cultures similarly made gave positive results in 15 per cent., and in these persons were found either bad teeth or tonsil remnants.

It appears from these results that the crypts are an almost constant source of hemolytic streptococci, and this location may be considered in a way their normal habitat. We have not been able to find that any other part of the body so constantly harbors them. The throat, as we have known for a long time, is their chief source and habitat in the body, and it would now appear that the crypts of the tonsils usually supply the throat with these organisms. From the throat they may be distributed to various parts of the body by contact and otherwise. Or they may be transferred to other persons through the usual channels by which respiratory diseases are transmitted.

In the isolation of streptocicci from crypts of tonsils, certain technical points should be kept in mind. In extirpated tonsils the organ should be cut lengthwise with a sterile, sharp knife; and then with a sterile forceps the crypts may be opened, more incisions being made if necessary, and cultures taken with a platinum

2. Davis, D. J.: J. Infect. Dis. **14**: 144, 1914.

3. Davis, D. J.: The Pathology and Bacteriology of the Faucial Tonsils, etc., J. Infect. Dis. **10**: 148, 1912.

loop from the depths of several crypts. It is necessary to do this for the reason that one crypt may be practically sterile and an adjacent one may contain many streptococci. This is not the rule, however; hemolytic streptococci when present at all are usually found in all or nearly all the crypts. Cultures of both tonsils should be made, since the organisms may be found on one side and not on the other. In tonsils from fresh postmortems the technic is essentially the same, and one finds the organisms commonly in such material.

In making cultures from tonsils in situ, certain difficulties are encountered. A small elongated loop of heavy wire should be inserted deep into several of the crypts, turned from side to side when in position, then carefully removed without touching other structures, and at once plated on blood agar. The green streptococcal colonies are usually present with the hemolyzers under these conditions, often in large numbers, since they are carried away on the wire from about the mouths of the crypts, where they are found abundantly. Excepting in acute infections of the tonsils, the cheesy or purulentlike material that exudes from the tonsillar crypts on pressure is no more, indeed is less, apt to contain hemolytic streptococci than the empty crypts. Much of the fluid material expressed from tonsils, enlarged or otherwise and commonly called pus, is not purulent when examined microscopically.

In conclusion, this point deserves emphasis: Nearly every one is harboring typical hemolytic streptococci in his tonsils which have not been differentiated from strains that cause serious infections, pneumonias, etc. Presumably such infections may or may not cause arthritis, iritis and other so-called focal infections; but finding them in the tonsil may mean nothing in relation to a possible systemic disease. Should one find abscesses or other definite pathologic lesions in the tonsils, a bacteriologic examination may be of value in determining the cause of an associated condition.

SUMMARY

In order to understand clearly the genesis of certain diseases, it is necessary to study intensively a suspected focus of infection, like the tonsil, in both normal and infected persons.

Lymphoid structures attain two maxima of distribution: one in the throat and another in the region of the ileocecal valve and appendix; these maxima correspond in general to the normal distribution of bacteria in the alimentary canal. At these points also the greatest number of pathogenic micro-organisms attack the body.

Plasma cells appear shortly after birth (therefore after infection) under the mucosa, and their presence probably indicates chronic absorption of infectious and other material.

Certain organisms injected into the crypts of the tonsils disappear in a few days. The flora normally found in the tonsils is a restricted one.

Actinomyces-like granules, composed of fusiform bacilli, streptococci and spirochetes growing together, appear as more or less normal inhabitants of the crypts. Here may be an important source of *B. fusiformis* in certain infections about the mouth caused by this organism.

In the tonsil crypts, *Streptococcus hemolyticus* is almost constantly found. This focus is one source of these organisms in the throat and adjacent structures. This fact must be considered in making throat cultures and in a study of the problem of hemolytic streptococcus carriers.

TWO UNUSUAL CASES OF PYELONEPHRITIS

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There is considerable divergence of opinion as to the surgical indication in cases of unilateral pyelonephritis. Recently the pendulum of opinion has swung toward conservation of the diseased kidney, decapsulation and nephrotomy being advocated as the procedures of choice. Some have taken a middle ground and are guided by the bacteriology of the urine obtained from the involved organ by means of the ureteral catheter. They choose nephrotomy for bacillary infections (such as *B. coli* and *B. pyocyaneus*), and reserve nephrectomy for coccus infections (such as staphylococci and streptococci). If it is remembered that in any infection the reaction of the human organism to the invading bacteria has an importance at least equal to that of the type of micro-organism, it follows that no hard and fast rule of this kind is to be relied on.

The decision must be made, rather, on the basis of the patient's clinical condition, on the estimation of his natural powers of resistance, and on the margin of safety. It is apparent from an examination of the pyelonephritic kidney with its diffusely infiltrated parenchyma and miliary foci of suppuration that the operation of decapsulation and nephrotomy cannot effectually remove or drain the infected tissues. The most it can accomplish is relief of tension and engorgement. Here the surgeon places his reliance on the patient's natural powers of resistance to bring about a resolution of the inflammation. The operation does not remove the focus, does not protect against extension and metastasis (the other kidney may become secondarily infected through the blood stream), and moreover exposes the patient to secondary hemorrhage, to recurrence of infection, and frequently to the dangers of a difficult secondary nephrectomy. A decision necessitating the weighing of these factors requires the nicest of clinical judgment. Primary nephrectomy is by far the safer procedure in patients showing evidence of severe septic absorption and of renal insufficiency with nitrogen retention, and in patients whose illness has been of long standing with resulting loss of weight and strength. In these patients, whose margin of safety is small, it is life which must be conserved first, and without delay.

With the object of illustrating these principles, two unusual cases of pyelonephritis are reported.[1]

REPORT OF CASES, WITH COMMENT

CASE 1.—*History.*—A man, aged 53, admitted, July 20, 1919, had experienced some difficulty in starting the urinary stream for two months. Urination had been painful and frequent, especially at night. There was no hematuria. Five days before he had suffered complete retention of urine and had been catheterized every eight hours. For the last two days he had complained of nausea and vertigo, and had vomited once.

Examination.—The patient, admitted at night, was a pasty looking, anemic man with a distended bladder, and a moderately enlarged prostate. A soft catheter was readily passed by the intern: 20 ounces of turbid urine were obtained, and the catheter left in situ. The urine showed a trace of albumin, many leukocytes, a few red cells and granular casts. Blood chemistry showed urea nitrogen, 46.2; incoagulable nitrogen, 96.9; uric acid, 5.5, and creatinin, 1.4. There

1. From the Surgical Service of Dr. Howard Lilienthal, Mount Sinai Hospital, presented before the Section on Genito-Urinary Surgery, New York Academy of Medicine, Dec. 17, 1919.

were evidences, therefore, of nephritis and azotemia. The systolic blood pressure was 140, and the diastolic, 90. Fundus examination was negative.

Clinical Course.—Twenty-four hours after admission and the insertion of the indwelling catheter, the temperature had risen from 99 to 104 F., and the urine had become bloody so that a phenolsulphonephthalein test could not be made. The next morning, fever persisting, permanent drainage was stopped and catheterization at intervals was substituted. The patient continued a febrile course (101 o 103 F.) and complained of dysuria and frequency. At each catheterization a residual of several ounces of very purulent, foul urine was obtained. On the fifth day, the temperature was 104.4, and uremic symptoms appeared. The patient rapidly became disoriented, delirious and unmanageable, with involuntary urination and defecation, so that special nurses were required. Hot packs, colonic irrigations and diuretics were instituted. Although the output was increased by forcing fluids, the urine showed a great deal of pus, anl was not improved by frequent bladder irrigations. The blood chemistry now showed (July 27) urea nitrogen, 56, and incoagulable nitrogen, 117. The phenolsulphonephthalein test showed only 15 per cent. excretion in two hours. Blood count demonstrated leukocytes, 19,000, and polymorphonuclears, 84 per cent. A blood culture was negative.

The cystoscopic examination revealed intense cystitis, marked trabeculation, enlargement of the middle lobe, and very marked enlargement of the lateral prostatic lobes projecting into the posterior urethra. Because of trigonal edema and the prostatic enlargement, ureteral catheters could be passed only for 1 cm. No indigocarmin was seen coming from either ureter during thirty-five minutes' observation.

A roentgenographic examination revealed no renal or ureteral lithiasis, but multiple fine concretions were seen in the prostate.

For a few days there was improvement, the temperature coming down to 99; but it rose again to 103, and the uremic symptoms became more marked. There had been slight tenderness in the left costovertebral angle which now became marked, and the lower pole of the left kidney became palpable. August 5, the left ureter was catheterized, purulent urine obtained, culture of which showed *B. pyocyaneus* and *Staphylococcus albus.* The ureteral catheter was left in situ and drained 30 ounces of purulent urine in twenty-four hours. The systemic symptoms progressed, nevertheless; chills and fever appeared, and the azotemia increased, the blood now showing urea nitrogen, 71; incoagulable nitrogen, 176, and creatinin, 5.3, the danger point having been reached.

August 8, cystoscopy demonstrated a clear urine from the right kidney, and I decided to explore the left kidney, as there seemed no doubt that it was the seat of an acute pyelonephritis which was endangering the life of the patient. Under gas and oxygen anesthesia the left kidney was rapidly exposed through the lumbar route. It was found enlarged to half again the normal size, congested, flea-bitten in appearance, and without gross abscess formation. In view of the very evident septic and toxic condition of the patient, a nephrectomy was performed. On sectioning the ureter, I found it bifid. The wound was closed with drainage.

The specimen showed an acute diffuse infiltration of the cortex and pyramids in a kidney with a bifid ureter and double pelvis.

Although loath to do so, I placed a permanent catheter in the bladder to avoid retention and its effects on the remaining kidney. The immediate results were striking. The temperature came down to 101 in forty-eight hours, and to normal on the sixth day. The uremic phenomena disappeared in twenty-four hours; the urinary output rose from 40 to 80 ounces a day, the fluid intake remaining the same.

Two weeks later (August 22), phenolsulphonephthalein test showed first appearance in forty minutes, and 10 per cent. excretion in two hours. Suprapubic cystostomy was performed with procain. Nine days later (August 31), the phenolsulphonephthalein appeared in twenty minutes, and 19 per cent. was excreted in two hours. Blood chemistry showed urea nitrogen, 25; incoagulable nitrogen, 60; uric acid, 1.6, and creatinin, 1.4. With gas oxygen anesthesia suprapubic prostatectomy was performed, the adenoma with its numerous sandy concretions being readily enucleated. The suprapubic wound healed in three weeks. A phenolsulphonephthalein test, December 6, showed first appearance in ten minutes, and excretion of 42 per cent. in two hours.

The history of this case presents a number of interesting features: 1. The sudden appearance of virulent infection apparently precipitated by the indwelling catheter. 2. The presence of numerous concretions in the prostatic adenoma. 3. The infection of a kidney showing congenital anomaly. I did not allow my curiosity to tempt me to make a pyelogram of the healthy kidney. It may or may not be anomalous, and anomalous kidneys are more prone to infection than normal ones. 4. The picture of uremia produced by the unilateral pyelonephritis and its immediate disappearance after removal of the offending organ. 5. The excellent functional result, the patient now having a better phenolsulphonephthalein excretion that at any previous observation.

CASE 2.—*History.*—A man, aged 42, who had been ill for two years, stated that his urination had been frequent for many years, at times every half hour, and that it had been accompanied by burning. About two years before he had begun to have gastric symptoms and had lost weight. There had been fulness and nausea after meals and occasional vomiting of food eaten four or five hours previously. A gastro-enterologist made roentgenographic examinations and diagnosed the condition duodenal ulcer (the appendix had been removed seven years before). About a year before he had noticed that the urine was turbid, and he had had fever and chills for a few days. He had had several attacks since. Only twice had there been severe pain, referred to the epigastrium and back, and lasting about twenty-four hours. Since that time urination had been frequent (every one to one and one-half hours), and there had been pain at the tip of the penis. Occasionally there had been a dull ache in the right lumbar region. He had been recently under the care of a urologist who had treated him ten times with some instrument for disease of the verumontanum. While under this therapy he had been having attacks of fever and chills.

Examination.—On examination at my office the patient appeared pale and thin and had apparently lost considerable weight. The urine showed pus. There was definite tenderness in the right hypochondrium, and here a mass was felt, probably the kidney. There was no tenderness in the back. A preliminary diagnosis of right renal calculus with infection was made, and the patient referred to the hospital. He came to the hospital four days later, having been in bed with fever and chills. Here we found the same physical signs.

Cystoscopy detected no obstruction in either ureter. The left side yielded clear urine, and phenolsulphonephthalein injected intravenously appeared in nine minutes; the right side yielded a urine containing clumps of pus cells, and phenolsulphonephthalein appeared in fourteen minutes. Wassermann reaction and blood culture were negative. Bladder urine showed *B. coli,* but ureteral urine yielded no growth. Total phenolsulphonephthalein was 48 per cent. and blood chemistry was normal (urea nitrogen, 16.8; incoagulable nitrogen, 38.8; uric acid, 4.0, and creatinin, 1.4).

Roentgenoscopy of the stomach and duodenum was negative. A roentgenogram of the genito-urinary tract showed no stones in either kidney, but three shadows were seen in the right lower ureteral region. Stereoscopic plates with opaque catheter in place showed these to be extra-ureteral shadows. A pyelogram made with 15 per cent. sodium bromid as the opaque substance showed an enlarged pelvis and calices, but no irregularity in form.

Treatment and Results.—November 6, as fever persisted and as leukocytosis of 20,000 with 90 per cent. polymorphonuclears was present, it was determined to expose the right kidney. Just before operation a catheter was again passed up the right ureter and a specimen of purulent urine obtained for culture.

Under gas and oxygen anesthesia the usual lumbar incision was made, and an enlarged kidney was found high up under the diaphragm. It was readily freed and delivered, and showed under the capsule several minute areas of infiltration. The organ was congested, and softer than normal in consistency. Decapsulation was performed, the kidney split longitudinally, and a soft phosphatic stone (not seen in roentgenograms) removed from the pelvis. The cut surface of the kidney showed a few areas of infiltration in the pyramids, a specimen of which was excised for pathologic examination. Two mattress sutures of catgut were placed, one near each end of the wound to control bleeding, a dressed tube was introduced into the pelvis, two packings were placed in the perirenal space, and the wound was closed in layers. A small tube drain was placed in the muscle layers.

The culture on the right ureteral urine collected just before operation was reported "anhemolytic streptococcus." This was somewhat of a surprise, as the bladder urine had shown *B. coli*. If I had known this finding at the time of operation, I should have been induced to perform a nephrectomy at once. The section removed from the cut kidney surface showed purulent infiltration.

After operation there was little change in the clinical picture, the temperature reaching 103 F. in the afternoons. On the fourth day, the patient became drowsy and apathetic, was almost constantly nauseated, and the next day began to vomit small amounts of yellowish fluid at frequent intervals. Blood chemistry now showed urea nitrogen, 65; incoagulable nitrogen, 98; uric acid, 5.0, and creatinin, 2.4.

In view of the progressing evidences of sepsis and uremia, it was decided to perform a secondary nephrectomy on the seventh day. November 13, under gas and oxygen, the wound was opened and considerable pus found in the muscle layers. The kidney, which was easily freed and delivered, showed several large areas of purulent infiltration and infarction. It was quickly removed, and the wound loosely packed with gauze. The operation was completed in twenty minutes.

There was another chill after operation, and the patient's condition was poor. The vomiting which was present before nephrectomy increased in frequency and amount and was not relieved by lavage or change in position. The vomitus was thin and yellowish brown. The abdomen was distended, but soft throughout. The picture was that of an acute postoperative gastric dilatation; at least, so we thought.

On the second day, the wound was dressed and found dry and clean. A transfusion of 400 c.c. of blood was made by the Unger method. The symptoms continued, however, the temperature rose to 105, and death occurred on the third day after nephrectomy.

Examination of the wound, which was wide open, revealed a small amount of serosanguineous fluid exuding from it. The wound was free of blood and there was no communication between the perinephric space and the peritoneal cavity. When the peritoneum was opened, greenish yellow pus was found among the intestinal coils and especially in the pelvis. The left kidney was normal except for cloudy swelling. The culture of the pus showed anhemolytic streptococci and colon bacilli.

I was present at the examination and saw a layer of fat and granulation tissue between the perinephric space and the peritoneal cavity. In the peritoneal cavity were no omental or other adhesions. Most of the pus was in the pelvic pouch. As there was no evidence of any peritoneal injury, it would appear that the peritonitis was either metastatic or that it had occurred by extension. Of the two possibilities, the metastatic origin appears more likely. I believe that the vomiting which set in on the fourth day after nephrotomy marked the onset of the peritonitis—in other words, the peritonitis was already present when the nephrectomy was performed. My belief is that a primary nephrectomy would have saved this man as it did the first patient.

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Clinical Notes, Suggestions, and New Instruments

TRANSPOSITION OF VISCERA WITH MULTIPLE MALFORMATIONS

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Transposition of viscera, partial or complete, is an uncommon but not a rare condition. Malformation of organs, especially of the heart and its great vessels, is still more often found. An unusual combination of the two in an infant from the obstetric department of the Siriraj Hospital, Bangkok, appears worthy of record.

REPORT OF CASE

Clinical History.—Nang Nien, a Siamese woman, aged 27, came to the hospital for her third confinement. The personal histories of the patient and her husband were negative. Her two previous labors had been normal. The first child died at 3 years from chronic diarrhea; the second was still living. Physical examination of the woman gave no evidence of disease. The child was in the left occipito-anterior position, and no abnormal symptoms occurred during pregnancy. Labor came on at full term and was quite easy, lasting three hours. The child was of good size, well formed and well nourished, and was apparently normal. Respiration began spontaneously, but cyanosis developed. This condition increased in intensity until death, which occurred five hours after birth, apparently from heart failure.

Postmortem Findings.—The subject was a boy in whom cyanosis, especially of the head and trunk, was pronounced.

Abdomen: The position of the abdominal organs was largely the reverse of normal. The colon occupied the left side. The rectum and sigmoid were distended by meconium, the sigmoid forming a loop that extended to the right of the midline just above the pelvis, but which was chiefly on the left side. The cecum and caput coli were slightly below and to the right of the splenic flexure of the colon; they lay anterior to the other structures, with the appendix projecting downward. The segment of the colon corresponding to the ascending and transverse portions was coiled posterior to the cecum, between the midline and the splenic flexure.

The liver was large, occupying the entire width of the abdomen, the parts on each side of the median line of the body being approximately the same in size and shape. The fissure for the umbilical vein and the quadrate and spigelian lobes were to the left of the midline of the organ; the gallbladder was to the right. Conditions as a whole would not warrant the assertion that the liver was on the left side of the body, although a further suggestive point was that the suprarenal on the left side resembled the right in shape and was adherent to the under surface of the liver.

The stomach was on the right side, where it occupied the same relative position as it normally does on the left.

No trace of a spleen could be found.

Thorax: The thymus gland was a short, thick organ, approximately 5 cm. long, 6 cm. broad, and 1 cm. thick. The left was slightly the larger of the two lobes. The pericardium and heart were on the right side to the same degree that those structures are normally on the left.

The heart appeared of the usual size. The sides were reversed, the inferior and superior cavae emptying into the auricle on the left, the pulmonary veins into the auricle on the right side. One large vessel emerged from the base of the ventricles and continued as the aorta. It had the usual three branches from the arch and a normal right bronchial artery. Through a small incision made into each ventricle near the apex, a probe passed from each cavity into the aorta. Through an opening in the interventricular septum apparently 1 cm. in diameter, the probe could be passed from one ventricle to the other. A pulmonary artery was not present.

The right pleura contained 100 c.c., the left 40 c.c. of serum. A decision as to transposition of the lungs was impossible

because each had four lobes of the same relative size. The lung on the right side was slightly smaller, but the difference might very well have been due to the greater amount of pleural fluid on that side. Both lungs were expanded throughout.

As it was considered desirable to preserve the entire body as a specimen of transposition, the heart was not further opened, and only the liver was removed in order to expose the stomach. No other abnormalities were noted.

Anatomic Diagnosis.—Transposition of viscera; absence of pulmonary artery; patent interventricular septum; four-lobed lung each side; absence of spleen; bilateral hydrothorax; cyanosis.

COMMENT

Of the conditions present in this child, the rarest is absence of the pulmonary artery. As literature on the subject is not available, we report the case without statistics.

PULMONARY ANTHRAX: REPORT OF A CASE

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Intern, City Hospital, and Pathologist, Kilmer Memorial Laboratory, Respectively

It is believed that the rarity of true pulmonary anthrax warrants the report of the following case.

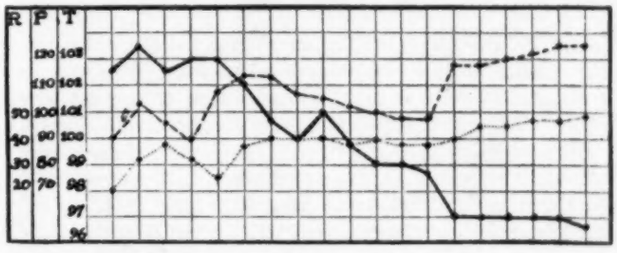
REPORT OF CASE

History.—M. P., a Pole, aged 36, a worker in the tannery of a local shoe manufacturing concern, was recommended from the factory dispensary to the service of Dr. D. C. O'Neil, through whose courtesy the case is reported. The tentative diagnosis was bronchopneumonia. A complete history was not obtainable, but the salient feature was that the patient had been suffering for one week previously with a sore throat and a pain across the right chest. It was discovered that the patient had been handling "green" hides in the tannery for some time before the onset of symptoms, but the exact period was not ascertained. There had been no treatment of any sort, and the patient was sent to the hospital from the dispensary immediately after examination.

Physical Examination.—The patient was well developed and well nourished and apparently in good physical condition. The skin was moist and relaxed, with no visible lesions of any kind; a moderate cyanosis was observed in the buccal mucous membrane and at the finger tips; there was no irregularity of the pulse rate, the volume and tension being about normal, the sphygmomanometer reading was: systolic, 118; diastolic, 78; the radial arteries were readily compressible and not thickened; respiration was most difficult, and it was this dyspnea which first attracted attention to the possible seriousness of the attack. Ordinary examination of the throat and pharynx revealed no pathologic condition other than a slight congestion of the mucous membrane. Smears were not taken. A thorough examination of the chest presented no evidences of a pneumonitis—there was no dulness, no increase of fremitus, nor any discoverable abnormalities other than numerous coarse, moist râles over the entire surface of both lungs. There was no apparent cardiac involvement, hypertrophy was not evident, and the valvular sounds were clear and distinct. There was no distention or rigidity of the abdomen, and no points of tenderness were found. The extremities were normal. Bowel evacuations had been regular, and there had been no urinary disturbances. Prolonged coughing spells, productive of considerable pinkish, frothy mucus, seemed by their intensity to annoy the patient more than the more evident dyspnea. The diagnosis depended, therefore, more on the notation of the subjective, rather than by elicitation of any objective, signs.

Clinical Course.—On admission, the temperature was 101.3 F., pulse rate 92, and respiration rate 20. General treatment was instituted, embodying heat to the affected side of the chest, a mild mercurous chlorid series followed by oleum ricini, with the administration every four hours of 2 grains of caffein sodiobenzoate and 10 grains of potassium citrate. During the night it was noted that the patient perspired freely with a rise of the temperature to 103.2, the pulse and respiration rate being 102 and 32, respectively. On the following day the patient appeared fairly comfortable except for some slight nausea with emesis in the early afternoon. In the evening, the cyanosis and dyspnea were noticeably greater, and on account of the fact that anthrax bacilli had been detected in the sputum, the patient was transferred to an isolation ward and 50 c.c. of antianthrax serum were given intravenously, supplemented by hypodermic injections of 1/100 grain of atropin sulphate with 10 minims of epinephrin (adrenalin) chlorid (1:1,000 solution) every three hours. The expectoration became more profuse, and gross blood was apparent. The patient slept well during the night, took his nourishment well, and showed no untoward effects of the serum. There was, in fact, an appreciable improvement, respiration became less laborious and the cyanosis was less marked. During the following day, the orthopnea, previously slight, became exaggerated, the respirations were increased to 40 per minute, and the pulse rate rose to 118, while the temperature dropped to a normal level. In the early morning of the fourth day in the hospital, the respirations were even more labored and the pain in the right chest was reported as more severe. Cyanosis increased, the extremities became cold, the temperature reached 97, and the pulse was weak and irregular with a rate of 128. Although vigorous stimulation was resorted to, the patient died; necropsy was refused.

Laboratory Findings.—Routine urinalysis on admission was negative and the blood count revealed 15,000 leukocytes, the increase being principally of polymorphonuclear neutrophils.



Temperature, pulse and respiration ratio (four hour intervals): solid line, temperature; broken line, pulse; dotted line, respiration.

A count made two days later gave 20,200 leukocytes, with the same relative differential. On admission the sputum was typed for pneumonia, and it was then that many large, nonmotile, gram-positive bacilli, morphologically resembling the anthrax bacillus, were discovered. To confirm or deny the suspicion, a blood culture was taken, the culture medium being glucose agar. Colonies were numerous at the end of twenty-four hours and the same bacillus was found in pure culture. A suspension was injected intraperitoneally into a guinea-pig and a rat; the pig succumbing in twenty-four hours and the rat twelve hours later. On necropsy of the animals there was noted the characteristic enlargement of the spleen, with distended capsule and with softened, dark and congested stroma; the liver and kidneys showed the same changes; the lungs were edematous; the peritoneal fluid was slightly blood-tinged; in the pig, hematuria was an additional symptom. From the blood of each animal the organism was recovered in great numbers, and sections of the two spleens showed the organism distributed throughout, surrounded by areas of minute hemorrhages. The forty-eight hour agar culture showed the typical tuft hair appearance of the colonies under the low magnification. In gelatin stab culture, the growth proceeded as in spicules diverging from the uppermost portion of the stab, and after forty-eight hours the gelatin about the top of the stab became liquefied. The growth in broth was evidently rapid, but the bacilli showed a tendency to sink, leaving clear broth at the top. In all smears made from culture mediums, spore formation was readily demonstrated by contrast staining, while the capsule was especially well defined in the smears made from the blood of the infected pig and rat by the Romanowsky blood stain. Hemolysis was noted in the blood

plates. The continuance of sputum typing proved the presence of a pneumococcus of Type IV, although the sputum was contaminated by numerous staphylococci and streptococci. A corroborative second sputum examination and blood culture from specimens taken the morning before death yielded essentially the same results.

CONCLUSIONS

1. Pulmonary anthrax infection can be diagnosed only on positive laboratory findings; sputum examinations and blood cultures are the means employed.

2. Early diagnosis is essential, and it would seem that vigorous treatment by intravenous administration of anti-anthrax serum offers the only hope of recovery.

3. Pulmonary anthrax may appear without the evidences of a violent pneumonia and yet prove fatal as a result of a decided clinical toxemia.

Therapeutics

A Department Devoted to the Improvement of Therapy. A Forum for the Discussion of the Use of Drugs and Other Remedies in the Treatment of Disease.

USE AND ABUSE OF CATHARTICS*

(*Continued from page 249*)

PURGATIVE PILLS

Purgative pills are among the "best sellers" in drug stores. This popularity attests to at least some measure of merit; and it must be admitted that pills are a simple, convenient, inoffensive and economical means for obtaining cathartic action. However, these very advantages also contribute to their great abuse, and cause them to lead all other purgatives as creators of the cathartic habit. Because of this, as well as because exact adjustment of dose by the physician and its gradual reduction by the patient are not as readily accomplished with pills as with other administration forms, prescriptions for purgative pills should not be given to patients unless there are positive indications for them. The triad of the careless routinistic doctor, the ignorantly "counter-prescribing" druggist, and the blatantly advertising proprietary pill promoter is responsible for having made a large number of persons "colonic" cripples — life-long slaves to pills.

INDICATIONS

Purgative pills are convenient for occasionally stimulating bowel evacuation in bed patients. There can hardly be an objection to such employment. But the habitual use of pills is justifiable only when the patient's constipation is hopeless so far as cure is concerned. This condition may exist in the toothless aged, who cannot or will not use artificial dentures, and who, therefore, do not eat enough coarse food to stimulate the bowel to proper function. It also exists in the multiparous woman, who has sacrificed the integrity of her abdominal muscles to her progeny and who, by reason of insufficiency of abdominal pressure, demands an increase in the motor activity of her intestinal musculature, which, unaided, is not equal to the task.

Sedentary habit, on the other hand, is no justification for purgative pill enslavement, unless heart disease or other physical defect renders a sufficiency of muscular exercise impossible. The attempt to purchase freedom from some of the ills of sluggish habits of life by the habitual use of "liver" pills should be depreciated; other important organs besides the bowel functionate below par in the sedentary person.

When it is a question of the use of the crutch or not walking at all, we choose the crutch as the lesser of the two evils — and so it is with purgative pills. In case chronic use becomes a necessity, pills are superior to all other administration forms of cathartics, chiefly on account of their convenience.

PILL ECONOMY

To minimize as much as possible the use of purgative pills, patients should be directed to use a pill at the end of any day on which they have not had bowel evacuation. The patient will then not take the pills oftener than once every other day; and, not as often, should a spontaneous tendency to bowel movement manifest itself. Thus the patient will have a thorough bowel evacuation at least every other day.

The important thing is to fit the patient as exactly as possible with the agent or agents best suited for him and in the smallest dose required by him. There is no sense in prescribing too mild a pill, and having two or three of these taken for an indefinite time, when one pill of exactly the required strength might as well be prepared. This is one of the chief objections to ready-made pills, even though they be official.

PRINCIPLES OF PILLS CONSTRUCTION

While *curare cito, tuto et jucunde* is our aim, simple prescriptions must be preferred to complex prescriptions, provided they produce as good results. The more complex the remedy, the more unmanageable and liable to unforeseen complications does it become. Nowhere is the principle of simplicity in prescribing more sinned against than in connection with cathartic pills.

The two chief reasons for combination are: mutual reinforcement, and the antagonizing of undesirable side effects. Mutual reinforcement is best obtained by what might be called *"heterotopic synergism,"* i. e., the cooperation of agents affecting different functional subdivisions of the organ to be acted on, whereby a result may be obtained with smaller dosage of each of the ingredients than if they were employed uncombined.

FUTILITY OF THE A. S. B. COMBINATION

A good example of an attempt at "rational" combination for both these effects is the "A. S. and B." pills (Pills of Aloin, Strychnin and Belladonna, N. F.).

Nothing may seem more logical than to add to the aloin some strychnin for the purpose of increasing the irritability of the motor neurons on which the aloin is to act; nor might it seem that anything would be more suitable to counteract the reputed tendency of aloes to produce griping than the powerful antispasmodic, belladonna. Unfortunately, by utilizing them in pill form at the same time, they cannot possibly act together, because of the different speed and duration of action of the three agents. Aloin is slow in action, requiring from ten to twelve hours — that is why it is generally given at bedtime. Strychnin and atropin, on the other hand, are rapidly absorbed and rapidly excreted, having but a brief duration of action. No experienced clinician would expect either of these

* This is the sixteenth of a series of articles on the pharmacology, physiology and practical application of the common laxatives and cathartics. The first article appeared October 18.

alkaloids to act for more than four hours. By the time the aloin gets its action in, the alkaloids have long since left the system by excretion into the urine.

To put these theoretical considerations to the experimental test, more than thirty volunteers in a class of medical students were given two pills each to be taken with an interval of about a week. One of these contained aloin; the other, the same dose of aloin and some extract of belladonna in the quantities found in the A. S. and B. pills. Strychnin was omitted, to reduce the experiment to its simplest terms. The pills were called No. 1 and No. 2 pills, and the experimenters did not know which of these contained the belladonna. They were asked to distinguish its presence by difference of action. The majority could not notice any difference whatever; a few thought the belladonna-containing pills were the ones that produced more griping; a few, that the simple aloin pill acted more disagreeably. Clinical use of the official *Pills of Aloes,* containing 0.13 gm. (2 grains) each of aloes and of soap, as compared with similarly extensive use of the A. S. and B. pills, did not demonstrate any greater tendency to griping displayed by the one than the other.

Admitting that the number of observations in the experiment just noted is too small for positive deductions — it ought to be repeated over and over again and would be quite as instructive as some of the animal experiments performed by medical students — the results, as they stand, support the theoretical deductions based on the relative time of action of the ingredients. After all, griping is a matter of size of dose, sensitiveness of individual, and condition of enteric contents rather than of name of drug.

It is gratifying, therefore, that the *Compound Laxative Pills* (U. S. P. VIII) similar in composition to the A. S. and B. pill, with the no doubt uncalled-for addition of ipecac, were deleted from the present pharmacopeia. However, these pills as well as the *Compound Pills of Aloin, Strychnin and Belladonna,* N. F., containing some extract of cascara, in addition, are still extensively used.

Rather popular at the present time also are the unofficial *"Cascara Compound Pills,"* commonly called "Hinckle's Pills," each containing:

	Grain
Cascara	¼
Aloin	¼
Resin of podophyllum	⅙
Extract of belladonna	⅛
Strychnin sulphate	1/60-1/120
Oleoresin of ginger	⅛

One wonders whether they are popular because their formula is not contained in the U. S. P. and N. F.— it has been said facetiously that the best way to destroy the popularity of a preparation is to make it official. Efficiency is, of course, granted to these as well as to all the other aloes pills, no matter what their composition. The question is as to the desirability of such ridiculous polypharmacy.

OBJECTIONS TO COMPOUND CATHARTIC PILLS

The official compound cathartic pills are no less objectionable. The chief objection is that they contain a considerable amount of calomel, and that people may buy them freely in drug stores and use them indefinitely, not knowing that they are poisonous. Every now and then cases of calomel poisoning can be traced to the compound cathartic pills, taken by some misguided layman for the benefit of his "liver." In drug stores the desirable custom existed quite generally of dispensing the *Vegetable Cathartic Pills* of the National Formulary — also known as "Compound Cathartic Pills, Improved"— when people called for compound cathartic pills without a prescription.[1] The "improvement" consists in the substitution of podophyllum and leptandra for the calomel and gamboge, and in the addition of extract of hyoscyamus and oil of peppermint, so that the "improved" pills boast of ten different ingredients: aloes, extract of colocynth, cardamom seed, resin of scammony, soap, extract of hyoscyamus, resin of jalap, extract of leptandra, resin of podophyllum and oil of peppermint. Eight ingredients are far too many to meet the demands of scientific combination, namely, that each ingredient improve the action in a demonstrable manner. No one, so far as is known, has even attempted to render this demonstration for either of these pills; and while some of the ingredients might conceivably reinforce each other, that which has not been demonstrated has no existence in science. In this demonstration, aloes and each of the other ingredients would have to be compared when given separately and when combined with each other in all possible different variations. This would require, with eight ingredients, more than fifty different sets of experiments, each of which should probably include from fifty to 100 observations. Until such a demonstration proves otherwise, these combinations must be considered utterly unscientific.

(To be continued)

1. These "improved" pills were deleted from the pharmacopeia at its last revision. It is to be regretted that the others did not meet the same fate, for they are even more objectionable.

Treatment of Malaria.—The subcommittee on medical research of the National Malaria Committee consisting of Drs. Charles C. Bass, New Orleans; William Krauss, Memphis, Tenn.; William H. Deaderick, Hot Springs, Ark.; George Dock, St. Louis, and Charles F. Craig, Col., M. C., U. S. Army, presents the following as a standard method of treatment of malaria for the purpose of curing the patient of his infection and recommends its general use by the medical profession. It is believed that this treatment will, in the great majority of cases, prevent relapses in the patients themselves and also prevent transmission of the infection to others. This opinion is based largely on the results of the treatment by this method, under average conditions, in the homes, of a large number of persons infected with malaria. For the acute attack, 10 grains of quinin sulphate by mouth, three times a day, for a period of at least three or four days, to be followed by 10 grains every night before retiring for a period of eight weeks. For infected persons not having acute symptoms at the time, only the eight weeks' treatment is required. The proportionate doses for children are: under 1 year, ½ grain; 1 year, 1 grain; 2 years, 2 grains; 3 and 4 years, 3 grains; 5, 6 and 7 years, 4 grains; 8, 9 and 10 years, 6 grains; 11, 12, 13 and 14 years, 8 grains; 15 years or older, 10 grains. It is not claimed that this is perfect or even the best treatment in all cases, but it is our belief that it is a good and satisfactory method for practical use to prevent relapse and transmission of the infection to other people. In a circular letter from Senior Surgeon Henry R. Carter, U. S. P. H. S., secretary of the National Malaria Committee to health officers of states in which malaria prevails the belief is expressed by the committee that a general adoption of this method of treatment by the physicians who treat malaria will result in freeing a large number of malaria patients from infection, so that they will neither themselves suffer from relapses (of infections incompletely cured), nor be sources of infection to mosquitoes and thus to other people. This would result in a very great diminution of malaria throughout the country. If this treatment meets with approval, it is suggested that it be brought to the notice of physicians in the malarious sections of the various states and that such other measures be taken as may be feasible for its general adoption.

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SATURDAY, JANUARY 31, 1920

THE DEBATED THEORIES OF SUPRARENAL FUNCTION

In a series of contributions published in recent years from the Laboratory of Physiology in the Harvard Medical School, Cannon and his co-workers have developed certain hypotheses with respect to the functions of the suprarenal glands. They have submitted experimental evidence that the suprarenal medulla is stimulated to secrete by emotional excitement, pain and asphyxia—conditions known to be accompanied by activity on the part of the sympathetic nervous system. In natural existence, Cannon argues, these conditions would commonly be associated with more or less struggle; and the visceral changes, including suprarenal secretion, which were said to accompany the emotional states, would be useful in great muscular effort. Both the sympathetic system and the suprarenal medulla were thus interpreted to play a part in important bodily adjustments.[1] This was quite different from the view that the suprarenal acts to detoxicate harmful products in the body, or the assumption that secreted epinephrin is destined to lend tonus to certain bodily structures. Cannon has designated his view of the association between suprarenal activity and the function of the sympathetic division of the autonomic nervous system in bodily emergencies as the "emergency theory."

Cannon's views have met with criticism from several sources. In this country, Stewart and Rogoff at the Western Reserve University have insisted that there is no increase of suprarenal secretion in the emotional excitement represented by fear, rage and pain, or in asphyxia. In France, Gley and Quinquaud also have denied that a true epinephrinemia exists. Unless it can be demonstrated that there is actually an augmented suprarenal secretion in the conditions postulated, the emergency theory fails.

More recently, Cannon[2] has subjected the work of his opponents to a severe criticism, besides adding new evidence for the tenability of his earlier contentions. Heretofore, epinephrin has as a rule been tested for in blood removed from the body. It has been found, however, that when the heart is completely denervated it becomes an organ highly sensitive to epinephrin, and hence can be employed to demonstrate an increment of suprarenal secretion in the circulating blood. The denervation is accomplished by severance of the vagus nerves and removal of the stellate ganglions in experimental animals. By the use of this procedure, which seems to avoid the defects charged to the older more clumsy methods of blood removal and testing, Cannon has duplicated his earlier findings.

For the present, therefore, it would seem that the burden of proof is again thrown on the shoulders of those who deny the tenability of Cannon's emergency hypothesis. The statement made in THE JOURNAL[3] that suprarenal secretion is not a necessity, at least under ordinary conditions of existence, still seems to be valid. As Cannon remarks, thus far no reliable evidence has been brought out by any investigator that there is any secretion whatever of the suprarenal glands under quiet, peaceful conditions. He does contend, however, that in times of great emotional stress or under circumstances which cause pain or asphyxia, epinephrin is secreted. This has been the foremost item under debate. Epinephrin is regarded as an aid, not a physiologic essential. Excitement, pain or asphyxia are, in natural existence, commonly associated with violent struggle for self-preservation. Under such circumstances, says Cannon further, the operation of the sympathetic division of the autonomic system, together with the aid which epinephrin affords, will muster the resources of the organism in such a way as to be of greatest service to such organs as are absolutely essential for combat, flight or pursuit. He concludes that the emergency theory of the suprarenal medulla is the only one which thus far has any experimental support.

1. Cannon, W. B.: Bodily Changes in Pain, Hunger, Fear and Rage, New York, 1915.

2. Cannon, W. B.: Studies on the Conditions of Activity in Endocrine Glands, V, The Isolated Heart as an Indicator of Adrenal Secretion Induced by Pain, Asphyxia and Excitement, Am. J. Physiol. **50**: 399 (Dec. 1) 1919.

AN INTERPRETATION OF THE CREATINURIA OF INFANCY

Normally, the urine of the adult male never contains creatin, although the closely related substance creatinin is a never-failing component of the urine as well as of the blood. Healthy women excrete creatin at times.[4] Infants and children, on the other hand, exhibit a creatinuria regularly on normal diets and under normal conditions of health. The reason for this peculiarity of metabolism in the adolescent period has never been discovered, although various hypotheses have been advanced in explanation. Thus it has been suggested that creatinuria is associated with acidosis. These two phenomena doubtless are concurrent at times; yet this fact does not demonstrate a causal rela-

3. Is Epinephrin Indispensable to Life? editorial, J. A. M. A. **73**: 192 (July 19) 1919.

4. Creatin and Creatinin in Blood, editorial, J. A. M. A. **69**: 648 (Aug. 25) 1917; The Significance of Creatinuria, ibid. **69**: 1008 (Aug. 25) 1917.

tion between them. It would be difficult to imagine that the acid-base equilibrium, on the upset of which a true acidosis in the body depends, should be so continuously disturbed as the normal continued output of urinary creatin in childhood would demand. There is no justification in assuming for the early period of life a continuous depletion of the fixed alkali of the blood, such as the modern definition of acidosis would demand. The carefully conducted investigations of this subject recently undertaken by Gamble and Goldschmidt[5] at Johns Hopkins University show, furthermore, that variations in the acid-base intake have no effect on the creatinuria of infants. We conclude with these investigators, therefore, that there is today no satisfactory evidence that acidosis per se is a factor in the production of creatinuria.

When creatin is fed to adult man it may not reappear in the urine unless the amount introduced is a considerable one. Ingested creatinin is excreted again almost quantitatively; at any rate, it can be recovered or accounted for to a far greater extent than can ingested creatin. It may be, therefore, that the adult can utilize or assimilate creatin, although this is not true of creatinin. In the infant or adolescent child, however, the fate of ingested creatin seems to be better established. According to the latest evidence,[5] small amounts even of ingested creatin lead to an increase of the creatinuria of infants. When a diet rich in protein is given, the elimination of the ingested creatin may be practically complete. This fact has an important bearing on another hypothesis regarding the genesis of creatinuria which relates the phenomenon to the size of the protein intake. It has been observed that wide differences exist in the output of creatin by infants when the excretion on high and low protein diets is compared. Thus, Denis and Kramer[6] of the Massachusetts General Hospital have asserted that the amount of creatin found in the urine of children is directly dependent on the intake of protein, being high when large quantities of protein (creatin-free) are ingested, and decreasing and in some cases disappearing entirely when the child is fed a diet of an extremely low protein content.

Gamble and Goldschmidt[7] have called attention to the fact that experiments on high and low protein diets in infancy have usually involved feeding larger or smaller quantities of milk. Until lately the existence of creatin and creatinin in this secretion has generally been overlooked.[8] The new experiments of Gamble and Goldschmidt indicate that whereas the creatin excretion of infants bears a relation to the quantity of milk fed, this concerns the nonprotein rather than the protein constituents of the secretion. Pending further investigation of the subject, it seems logical to assume that as milk, the customary staple food of infancy, contains creatin; and as this substance, for some as yet unknown reason, is not destroyed readily in the adolescent organism, the ingestion of creatin is a large factor in the creatinuria of infancy. Whether the dietary intake of creatin is sufficient to account so well for the creatin excreted in the urine in other periods of growth remains to be ascertained by further research.

5. Gamble, J. L., and Goldschmidt, S.: A Study of Creatinuria in Infants, I, Relation of Creatinuria to Acidosis: The Elimination of Ingested Creatine and Creatinine, J. Biol. Chem. **40**: 199 (Nov.) 1919.

6. Denis, W., and Kramer, J. G.: The Influence of Protein Intake on Creatine Excretion in Children, J. Biol. Chem. **30**: 189 (June) 1917.

7. Gamble, J. L., and Goldschmidt, S.: A Study of Creatinuria in Infants, II, Relation of Protein Intake to Urinary Creatine, J. Biol. Chem. **40**: 215 (Nov.) 1919.

8. Denis, W., and Minot, A. S.: The Non-Protein Nitrogenous Constituents of Cow's Milk, J. Biol. Chem. **38**: 453 (July) 1919; Non-Protein Nitrogenous Constituents of Human Milk, ibid. **39**: 47 (Aug.) 1919.

THE DEATH OF TISSUES AND THE LIFE OF PROTOPLASM

Until a few years ago, it was assumed that the life and development of tissues and their constituent cells are bound up with the body as a whole. Body cells had not been "cultivated" in vitro in the way that has become familiar in the growth of micro-organisms of various sorts. The pioneer experiments of Harrison[1] showed the possibility of cultivating tissues outside of the body by the demonstration that embryonic tissue of the frog, transplanted into coagulable lymph, will develop normally. Subsequently Carrel and Burrows[2] succeeded in cultivating outside of the body adult tissues of mammals. These possibilities have since been demonstrated repeatedly by various investigators in different parts of the world. Not only normal but also malignant tissues have thus been grown in culture.

At first, before the experimental technic was developed to its present stage of perfection, the life of the tissue cultures outside of the body was brief. It was measured in days or weeks. When Carrel[3] announced, in 1912, that fragments of connective tissue had been kept in vitro in a condition of active life for more than two months, the problem of senility and death were put in a new light. Are they preventable occurrences due to the accumulation of waste or the lack of nutriment or some other remediable or avoidable factor? As Carrel remarked in connection with these earlier observations, it is conceivable that the length of life of a tissue outside of the organism could greatly exceed its normal duration in the body, because elemental death might be postponed indefinitely by a proper artificial nutrition.

Colonies of infusoria like bacteria proliferate indefinitely. Woodruff has shown that the protoplasm of paramecia is capable of seemingly endless reproduction, without the sexual device of "renewal of youth" by conjugation. Likewise, the connective tissue cells now appear to have the power of multiplying indefinitely in a culture medium, as do micro-organisms. A strain of

1. Harrison, R. G.: Proc. Soc. Exper. Biol. & Med. **4**: 140, 1907; Harvey Lectures, Philadelphia, 1907-1908; Anat. Record **2**: 385, 1908; J. Exper. Zool. **9**: 787, 1910.

2. Carrel, Alexis, and Burrows, M. T.: Cultivation of Tissues in Vitro and Its Technic, J. Exper. Med. **13**: 387, 1911.

3. Carrel, Alexis: On the Permanent Life of Tissues Outside of the Organism, J. Exper. Med. **15**: 516, 1912.

connective tissue cells first cultivated by Carrel in 1912 at the Rockefeller Institute of Medical Research, New York, is still very active after more than seven years of life outside the body in vitro.[4] Its rate of activity has not decreased during this period, despite more than a thousand transplantations that fragments of it have undergone. Such facts place the regenerative capacities of protoplasm in a new light; they likewise lend further interest to the broader problems of tissue culture and conservation, and bring us measurably nearer to the possibilities of controlling or modifying tissue growth by understanding its laws.

Current Comment

"INFLUENZA"

Presumably, the recent recrudescence of influenza in several of our larger cities, including Chicago, Baltimore and New York, has had something to do with the Congressional action appropriating a half million dollars to control influenza.[5] The devastation caused by the great epidemic of a year ago, while still fresh in the minds of many, was, nevertheless, already beginning to be forgotten especially by those whose homes were untouched by the disease. Fortunately, there is reason to believe that the present prevailing sickness in most instances does not approach either in extent or in virulence the violent infections of last year's epidemic. The percentage of deaths is considerably lower and the number of persons affected probably far below the number affected at that time. Further, the distinction between the serious condition occurring during the last epidemic and milder infections, such as common colds, grip, tonsillitis, sinusitis, rhinitis and coryza, is not absolutely clear. During an epidemic it is too easy and convenient to refer to all such conditions as that which the epidemic concerns. As has been repeatedly stated, local flare-ups of such sequelae were common following previous epidemics. Many physicians have written regarding preventive and therapeutic measures, evidently under the impression that some specific methods may have been worked out. It is doubtful whether such measures exist and also whether they will be discovered in time to demonstrate their virtues in connection with the present conditions. This is especially true when we consider that the bacteriology of these infections varies in different parts of the country and that different persons react in different ways to different bacteria. Health authorities, physicians and the public should not, therefore, "view with alarm" the present morbidity. Perhaps when the excitement of the hour has passed and the statistics are collated, they will reveal that the death rate from pneumonia of this year is not much greater than it was in winters previous to the great epidemic. In the presence of illness the physician and patient will do well to rely on the ordinary preventive measures against acute infections, on good hygienic care and time-tried symptomatic treatment. Particularly important is early rest in bed; moreover, the patient should remain in bed until well after the symptoms have disappeared and the temperature returned to normal.

4. Ebeling, A. H.: A Strain of Connective Tissue Seven Years Old, J. Exper. Med. **30**: 531, 1919.
5. General News, this issue, p. 334.

COMPETITORS IN UNPOPULARITY

The physician is not the only scientific man who is made the sport of the pseudo-scientist or the disappointed layman. The *Scientific American*, under the heading "Our Unpopular Weather Man," draws a pertinent comparison in an editorial that is so good that we quote it in full:

> Who, in all history, ever suffered unpopularity more widespread and more undeserved than the weather man? When his prophecies hit the mark, this is taken as a matter of course, and tomorrow will forget today's success. But his occasional failures—especially if rain comes when he had given his sanction to our plans for an outing—such impardonable failures are recorded in indelible writing, with illuminated capitals to impress the event on the memory.
>
> And, strangely enough, in this atmosphere of unforgiving criticism, the charlatan weather prophet still flourishes, and with blatant self-confidence foretells to a congregation of believers the weather for each and every day next year or the year after, or any other year. Old myths, negated anew by each year's experience, seem to have a charmed life, proof against the bullets of obvious fact. The scientific weather man, in modesty, forbears to predict anything but the immediate future—tomorrow, and perhaps the day after. Beyond this lies uncertainty. He hopes, indeed, for a future development of his science when, aided by more complete equipment, he may be able to give at least an approximate indication of more remote events. As yet, however, this is but a pious hope.
>
> But the charlatan is not encumbered with any such impediments of modesty. It is just as easy to foretell the weather a hundred years ahead as a hundred hours or minutes—it is even easier, for there will be none to call you to account if you miss the mark.
>
> In this the popular attitude is much the same as in the matter of medical attention. The doctor's successes are soon forgotten; his inevitable failures—for the foe is in the end invincible—are burnt into the memory. And those who are most vociferous in their criticism of the bona fide physician faithfully plying his science, are commonly the first to turn to the charlatan for aid in the time of trouble. Truly, they receive their reward.
>
> The harm done is perhaps not so very great. The physician goes on his rounds regardless of undeserved fault-finding; and the weather man continues to publish his bulletin day by day, undisturbed by criticism.
>
> Yet our sense of justice impels us to plead: In mercy, good people, be charitable, and remember that the weather man only *foretells*, he does not make the *weather*.

The weather man, like the physician, deals with factors which, while as old as the universe, are still but little understood and are of bewildering complexity. It is because of this complexity that empirics in medicine and in meteorology flourish. But the quack doctor has a vast advantage over the quack weather forecaster. The charlatan weather prophet has about an even break in the chances of guessing right; the medical charlatan has many more chances of getting credit for curing the patient. For in how large a percentage of all ailments, serious and trivial combined, does the patient get well without treatment or even in spite of treatment? In one other respect the science of meteorology has an advantage over the science of medicine: there are not a thousand-and-one meteorological

cults each based on its own bizarre conceptions of the climatic universe, each with its following of enthusiastic ignoramuses and each convinced that scientific meteorology is a snare and a delusion and a deep-laid scheme on the part of the meteorologists to deprive a free people of their inalienable rights to have whatever kind of weather they want. No, much as we sympathize with the weather man, we still feel that he has a tremendous advantage over the medical man. The cocksureness of ignorance will, of course, command a hearing in meteorology as it does in the realm of medicine. The conservative prognostications of the scientific man never make the appeal that is carried by the blatant assurance of the quack. But science goes on the even tenor of its way and the public, when it has something serious at stake, will continue to rely on the reports of the weather bureau and the ministrations of scientific medicine.

UNIVERSAL MILITARY TRAINING

The Committee on Military Affairs of the United States Senate has recommended for passage the Wadsworth army bill and retained the clauses providing for compulsory universal military training. The vote in the committee was nine to two in favor of the bill, which probably means that the bill will pass the Senate. As amended, the bill provides for training periods of four months for each young man, to be taken between the ages of 18 and 21. Opportunity will be given twice each year, making six periods from which the young man may select. While such a brief training period as four months is by no means sufficient, the bill is to be commended, for, after the value of the training becomes appreciated, its duration will probably be extended.

THYROIDECTOMY IN PREGNANCY

It is well known that women with myxedema seldom become pregnant. As myxedema represents the highest grade of hypothyroidism, and the milder grades are not incompatible with pregnancy, anything that throws light on the effects on pregnancy of the removal of the thyroid is not without clinical interest. Many years ago, Halsted in his classical experimental work on the thyroid gland showed that in dogs from which the gland had been partly removed pregnancy might result in the birth of puppies whose thyroids were from twelve to twenty times larger than normal. No particular attention was attracted by these somewhat startling observations, although one or two later observers working on pathologic conditions of the thyroid experimentally produced have reported conflicting results. The question has recently been restudied by Ukita,[1] who performed thyroidectomy on pregnant rabbits. His two main conclusions are that the removal of the thyroid in the rabbit greatly prolongs the period of gestation, and that it produces definite developmental changes in the young. The period of gestation was in some instances twice the normal. The young resulting from these pregnancies were undersized, showed by pathologic and roentgen-ray study delayed ossification of the bones, and also showed hypertrophy of the thyroid gland which was associated with the microscopic appearances of a degree of function more active than is normal in the newly born. These observations recall the fact that a relationship between the activity of the thyroid and sexual functions has long been recognized by clinicians. It is well known that enlargement of the gland frequently takes place during menstrual periods, and commonly takes place during pregnancy. The relationship of the thyroid to physical and mental development as exemplified by sporadic and endemic cretinism is also a thoroughly authenticated clinical fact. The experimental observations of Ukita would seem to be particularly suggestive in their bearing on the possible relationships between the milder grades of hypothyroidism and hyperthyroidism in women, and the development of children born of such mothers. They suggest that the function of the thyroid gland may exert some influence on the duration of pregnancy. Is it possible that some cases of delayed birth are due to hypothyroidism in the mother? May premature delivery be associated with the milder grades of hyperthyroidism? Investigations along these lines should prove interesting.

1. Ukita: Acta scholae med. univ. imp. Kioto **3**: 281, 1919; abstr. J. A. M. A. **74**: 213 (Jan. 17) 1920.

EFFECT OF WAR ON GROWTH OF CHILDREN IN DIFFERENT SOCIAL GROUPS

It is an old adage that "death is no respecter of persons"; perhaps it may be said in analogous sense that war is no respecter of classes. High and low, rich and poor—all social groups have suffered from its ravages, often in unexpected ways. In many respects, war tends to bring humanity nearer to a common level. An interesting illustration has lately been published by the Munich pediatrician Pfaundler[1] regarding the effect of war conditions on the growth of children. During prewar days, in the measurements of adolescents of school age, differences associated with unlike social status of the parents were clearly discernible from the available statistics. Thus, as a rule the children from homes of the professional classes exhibited a noticeably larger body weight and height than those of the same age born of parents in the so-called working classes. The exigencies of the last five years—particularly the shortage of suitable foods—have affected the growth of children of school age in general in the central countries of Europe. For example, at the age of 6 years Munich girls and boys have grown on the average 3 cm. less in height and 1 kg. or more in weight than was the case in the same city before the war. The average decrease in gains is, however, more conspicuous in the children of the professional group than in those from the less well-to-do classes. Six-year old boys of the latter were only 0.2 kg. behind the prewar average for their category, whereas the other group of boys were 1 kg. lighter in weight than were their equals in age in 1914. As Pfaundler interprets this, since the children of the poor are as a rule smaller and lighter than those of the well-to-do, the war has tended to level the classes from a somatic as well as other standpoints.

1. Pfaundler, M.: Ueber Körpermasse von münchener Schulkindern während des Krieges, München. med. Wchnschr., Aug. 1, 1919, No. 31, p. 859.

Association News

THE NEW ORLEANS SESSION

To New Orleans by Boat

Dr. H. W. E. Walther, New Orleans, chairman of the Subcommittee on Transportation of the Local Committee of Arrangements for the New Orleans session, April 26 to 30, desires to assist in the getting up of boat parties to go to New Orleans. He wishes to get into communication with local medical organizations in cities located in the Mississippi River Valley as well as in seaport cities on the Gulf of Mexico and the Atlantic Coast. He offers his services in order that organizations may be effected at different points of parties of sufficient numbers to justify chartering boats for the trip. Whenever such groups can be assembled, efforts will be made to induce steamship companies to arrange for these excursions. Letters to Dr. Walther should be addressed to the Headquarters of the Local Committee on Arrangements, 1216 Maison Blanche Building, New Orleans, La.

From Baltimore to New Orleans

Dr. Ira J. Haynes, P. O. Box 24, Richmond, Va., is interested in arranging a party to go by boat from Baltimore to New Orleans. The itinerary under consideration contemplates touching at Old Point Comfort, Va., Charleston, S. C., and a twelve-hour stopover in Havana, the boat being scheduled to arrive in New Orleans early on Monday, April 26, in time for the opening meeting of the House of Delegates.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

COLORADO

Personal.—Dr. Charles D. Spivak, Denver, left for New York, December 28, to join the other members of the joint distributing committee of the Jewish war sufferers relief work, and expected to sail for Europe, January 2.

Tuberculosis School Incorporated.—A number of physicians of Colorado Springs filed an affidavit, January 1, for the incorporation of the Colorado School of Tuberculosis, the purposes of which are described as follows: "To furnish without pecuniary profit to its members, opportunity for special advanced study in tuberculosis to physicians and others through the medium of regular courses of instruction and institutions, and laboratories and other agencies devoted to investigation, treatment and cure of the disease."

New Officers.—At the annual meeting of the Medical Society of the City of Denver, Dr. Arnold S. Taussig was elected president; Dr. William A. Sedwick, vice president; Minnie C. T. Love, secretary (reelected), and Dr. Franklin P. Gengenbach, treasurer (reelected), all of Denver.——El Paso County Medical Society at its annual meeting in Colorado Springs, December 10, elected Dr. Clarence R. Arnold, president; Dr. George B. Gilbert, vice president; Dr. Claude E. Richmond, secretary, and Dr. Omer R. Gillette, treasurer, all of Colorado Springs.

GEORGIA

New Laboratory for Fort McPherson.—The War Department announced, December 29, that plans and specifications for a new permanent department laboratory building to be erected at Fort McPherson, Atlanta, had been prepared.

Tributes to Service Men.—December 19, the members of the Georgia Medical Society of Chatham County who had served in the army and navy were given a supper at the Hotel DeSoto by the society.——At the annual banquet of the Fulton County Medical Society, January 8, the members of the organization who were in the military service during the war were the guests of honor. Dr. Elmore C. Thrash, Atlanta, the retiring president, acted as toastmaster, and the president-elect, Dr. Walter B. Emery, Atlanta, delivered the principal address on the subject of loyalty.

New Officers.—At the annual meeting of the Georgia Medical Society of Chatham County, held in Savannah, December 16, Dr. William H. Myers was elected president; Dr. Lawrence Lee, vice president, and Dr. Everett L. Bishop was reelected secretary-treasurer, all of Savannah.——Walker County Medical Society, at its annual meeting held in Lafayette, elected Dr. Robert M. Coulter, president; Dr. James P. McWilliams, vice president, and Dr. John H. Hammond, secretary, all of Lafayette.——At the annual meeting of the Clarke County Medical Club, held in Athens, December 12, Dr. Ralph M. Goss was elected president; Dr. Allen C. Holliday, vice president, and Dr. James C Holliday, secretary-treasurer, all of Athens.

ILLINOIS

New Officers.—St. Clair County Medical Association at its annual meeting held in East St. Louis, January 8, elected Dr. Henry A. Cables, East St. Louis, president; Dr. Lee D. Applewhite, East St. Louis, vice president; Dr. Charles W. Lillie, East St. Louis, secretary (reelected), and Dr. Adolph E. Hansing, Belleville, treasurer. The association authorized the formation of a branch in Belleville.

Hospital Staff Election.—At the annual meeting of the staff of Passavant Hospital, Jacksonville, January 5, Dr. Henry C. Woltman, Jacksonville, was elected president; Dr. Tully O. Hardesty, Jacksonville, secretary; Drs. Walter L. Frank, Jacksonville, and David W. Reid, Jacksonville, members of the medical board, and Dr. Charles E. Cole, Jacksonville, dean of the training school for nurses.

Chicago

Antispitting Drive.—The city ordinance against spitting on sidewalks took on new life last week on account of the prevalence of influenza. Nearly 500 people were arrested for violation of the ordinance, January 22, alone.

Laboratory Workers Form Union.—There has been formed recently in Chicago a Scientific Laboratory Workers' Union, No. 16,986, American Federation of Labor. This includes fifteen members, physicians, chemists, and bacteriologists of the Bureau of Laboratories of the Chicago Department of Health.

Personal.—Dr. John A. McGill has been elected president, and Dr. William F. Dickson, second vice president of the Illinois St. Andrews Society.——Dr. Margaret R. Otis was struck by a street car, January 20, and seriously injured.——Dr. H. Gideon Wells spoke before the Geographical Society of Chicago, January 23, on "Roumania in War and Peace."

Arrested for Morphin Selling.—John Brady, said to be known to morphin addicts as the "dope king," was arrested, January 24, charged with violation of the Harrison law. According to the policeman, Brady had at that time fifty packages of morphin which he was peddling at $5.00 each.——The office of Dr. Edmond D. Converse was raided, January 22, and the doctor is said to have been charged with illegally prescribing morphin for drug addicts.

Internists Elect Officers.—At the fifth annual meeting of the Chicago Society of Internal Medicine, held January 26, Dr. Peter Bassoe was elected president and Dr. Clifford H. Grulee, vice president, and Dr. Charles A. Elliott was reelected secretary-treasurer. Dr. Hugh McGuigan discussed "Some Points of Interest in the Action of Chlorine-Containing Anesthetics and Hypnotics;" Dr. Frank Smithies described "Late Cardio-Respiratory Manifestations of Gassing in Returned Soldiers," and Dr. Anton J. Carlson spoke of "The Effects of Mass Starvation as Observed in Central and Eastern Europe, and the Practical Problem Involved in the Victualling of These People."

Influenza and Pneumonia.—The new cases of influenza are now beginning to decrease. During the twenty-four hours ended at 5 p m., January 26, there were 166 deaths from influenza and pneumonia, and new cases of influenza numbered 616, and the new cases of pneumonia, 367. For three days of last week, there were more than 2,000 new influenza cases a day.——After a conference with the superintendent of the State Bureau of Registration the health commissioner announces that hospitals will be permitted to accept women with grammar school education for nursing courses, and furthermore that the bureau will cooperate in the establishment of a two years' training course for nurses.——In the seventy hospitals of Chicago there are at present

said to be 831 cases of pneumonia and influenza.——There are 1,454 empty beds in hospitals, this being due mostly to shortage of nurses which has prevented many institutions from working to capacity.

KANSAS

Public Health Laboratory Reopened.—The secretary of the state board of health announces the reopening of the Public Health Laboratory at the School of Medicine, Rosedale, under the direction of Dr. Donald R. Black, Kansas City. At this laboratory free examinations will be made of smears, and the gonococcus infection, and the Wassermann test given.

New Officers.—At the annual meeting of the Central Kansas Medical Society, held in Russell, December 17, Dr. Frederick S. Hawes, Russell, was reelected president, and Dr. Leo V. Turgeon, Wilson, secretary-treasurer. Wilson was elected as the next place of meeting.——Douglas County Medical Society at its annual meeting in Lawrence, January 2, elected Dr. Carl Phillips, Lawrence, president, and reelected Dr. Charles E. Orelup, Lawrence, vice president; Dr. Joshua R. Bechtel, Lawrence, secretary, and Dr. Elijah M. Owen, Lawrence, treasurer.——At the December meeting of the Bourbon Medical Society held in Fort Scott, Dr. Robert Aikman, Fort Scott, was elected president; Dr. Claud F. Young, Fort Scott, vice president; Dr. John C. Lardner, secretary, and Dr. Millard F. Jarrett, Fort Scott, treasurer.

MARYLAND

Personal.—Dr. H. Warren Buckler, Baltimore, has been placed in charge of the division of medical inspection of schools of Baltimore.——Dr. Edwin W. Schultz, Johns Hopkins Medical School, has gone to Leland Stanford Junior University to give a course of instruction in experimental pathology.

New Officers.—At the annual meeting of the Allegany-Garrett County Medical Society at Cumberland, January 12, Dr. George O. Sharrett was elected president; Dr. J. Kile Cowherd, vice president; Dr. Herbert V. V. Deming, secretary, and Dr. F. Garnett Cowherd, treasurer, all of Cumberland.

Influenza Increasing in Baltimore.—According to reports from the health department, influenza is on the increase in Baltimore, there having been eighty-seven new cases reported in the last twenty-four hours (January 24), while there were but thirty-three reported for the previous twenty-four hours. However, the disease is not epidemic in Baltimore and the health department does not see any reason to fear a recurrence of the havoc of 1918.

Smallpox Invasion Feared.—Owing to reports that smallpox is spreading through the lower part of Delaware, Dr. John S. Fulton, Baltimore, secretary of the state board of health, is taking precautions against allowing the disease to get over the boundaries into adjoining counties on the eastern shore of Maryland. These counties are subject to infectious invasion unless the Delaware authorities take a strong stand in the matter of intertravel in cooperation with the Maryland authorities. Dr. Fulton is considering a plan of revaccinating all persons who visit Delaware and return to the state.

Memorial Ward Opened.—The Hospital for the Women of Maryland, January 25, opened the Davis-Whitridge Memorial, a new section in the medical and surgical department, which will be used for women in moderate circumstances. The ward has been installed by the hospital to memorialize the work of Mrs. Andrew H. Whitridge, who has been connected with the hospital for ten years and was vice president of the board and Mrs. Francis A. Davis, who for fourteen years had been treasurer. The ward will contain eight semiprivate rooms and will be located on the third floor of one wing. Nurses' quarters and a chart room are attached to the ward.

United States Army General Hospital No. 2 to Go.—The rapid evacuation of Fort McHenry, both by the transfer of patients to other army hospitals and by their recovery, points to an early closing of the fort as an army hospital. There are 158 patients awaiting the arrival of a government hospital train to take them to General Hospital No. 31 at Carlisle, Pa. Col. Henry Page, commanding officer at the fort, has received orders for his transfer to the command of General Hospital No. 21 at Denver, the transfer to occur February 15. Colonel Page's successor in the command of the fort has not been named. Since December 1, about 1,040 men have been discharged from the hospital.

MISSOURI

Antivaccination League Organized.—An antivaccination league was organized at St. Joseph, January 16, by 100 persons, mostly women. The meeting voted that, despite the order of the health board that all schoolchildren must be vaccinated or must stay out of school thirty days, they would send their children to school and refuse to allow them to be vaccinated under any circumstances.

Venereal Disease Clinic.—A venereal disease clinic was opened at St. Joseph on January 17, in Community Hall, starting with forty-six patients. Several months ago, an effort was made to have the clinic financed by the city and operated by the city board of health, but the city could not find the necessary money. The local Red Cross chapter then gave $5,000, which insures an equal amount from the Chamberlain-Kahn fund. The clinic is under the management of a committee of seven—three of the Red Cross, the three members of the city board of health and one member of the Buchanan County Medical Society.

St. Louis

New Head of Hospital Staff.—Dr. Hanau W. Loeb has been appointed chief of staff of the Jewish Hospital staff succeeding Dr. Herman Tuholske, resigned. This new position will not interfere with the work of Dr. Loeb as dean of the University of St. Louis Medical College.

Kentucky Visitors.—At the meeting of the St. Louis Medical Society, January 27, Dr. Louis Frank, Louisville, read a paper on "Blood Studies in Connection with Surgery" and Dr. Granville S. Hanes, Louisville, one on "Local Pain and Other Symptoms Associated with the Infection of the Anal Tissue." Prior to the meeting, Drs. Frank and Hanes were guests of honor at a dinner at the University Club.

NEW MEXICO

Communicable Disease.—The health department reports at least 100 cases of smallpox of mild character in Tularosa.——An outbreak of scarlet fever is reported at Ojo Caliente.

Venereal Clinic Opened.—January 5, a free clinic for venereal disease was opened at Santa Fe under the auspices of the state board of health. Similar clinics are to be opened at Deming and Albuquerque.

State Laboratory Opened.—The state laboratory, which is being provided jointly by the state board of health and the University of New Mexico at Albuquerque, was opened, January 15, in charge of a trained technician.

New Officers.—At the annual meeting of the Bernalillo County Medical Society, held in Albuquerque, December 3, the following officers were elected: president, Dr. Cowan C. Meachem, Bernalillo; vice presidents, Drs. John R. Van Atta, Albuquerque, Arno Klein, Albuquerque; secretary-treasurer, Dr. Frank E. Tull, Albuquerque, and corresponding secretary, Dr. George S. McLandress, Albuquerque.

NEW YORK

New York City

Influenza on Liner.—The Spanish liner *P. de Satrustegui* from Barcelona, which reached Quarantine, January 17, had aboard thirty-one patients with influenza among 414 steerage passengers. The patients were all removed to Swinburne Island, and the vessel was fumigated.

New Tuberculosis Association Organized.—The antituberculosis work in New York City has been taken over by a new organization, the New York Tuberculosis Association, Inc., with Dr. James Alexander Miller, president; Mr. Homer Folks, vice president, and Dr. John S. Billings, Jr., director.

New Regulations in Regard to Quarantine Periods.—At a recent meeting of the department of health, the following regulations governing the isolation of persons affected with an infectious disease and amending Section 89 of the Sanitary Code were adopted:

For the purpose of these regulations, the minimum period of quarantine shall be as follows:

a. Diphtheria: Twelve days from onset.
b. Scarlet Fever: Thirty days after the onset of the first symptoms.
c. Cerebrospinal meningitis: Fourteen days from the onset.
d. Acute anterior poliomyelitis: Three weeks from the date of onset.
e. Typhoid Fever: Until ten days after the patient's temperature reaches normal.

Wood Alcohol Poisoning Reportable.—At a meeting of the board of health, held, December 31, the following amendment

to the Sanitary Code, making wood alcohol poisoning reportable to the health department, were adopted:

It shall be the duty of the manager or managers, superintendent, or person in charge of every hospital, institution, or dispensary in the city of New York to report immediately to the Department of Health the name, age, and address of every occupant or inmate thereof, or person treated therein, affected with wood alcohol or wood naphtha poisoning; and it shall also be the duty of every physician in said city to make immediately a similar report to the Department of Health relative to any person found by such physician to be affected with wood alcohol or wood naphtha poisoning.

Influenza Becomes Epidemic.—The tabulations of the health department, January 23, show that during the preceding twenty-four hours 1,332 new cases of influenza were recorded, and 406 new cases of pneumonia for the same period. Since January 1, when the outbreak officially is reckoned to have begun, there has been a total of 3,096 cases of influenza and 3,336 cases of pneumonia. Comparison with the figures of Oct. 4, 1918, which is taken by the department of health as the day of that epidemic corresponding to January 23 of the present outbreak, shows that while about the same number of new cases were reported on these dates, the number of deaths reported was about twice as large as on the former date. A conference of the directors of the health department bureaus and the sanitary superintendents of the various boroughs was held and all department administrative details of the attack on the epidemic were arranged. The main headquarters of the department of health will remain open twenty-four hours of the day and seven days a week until the epidemic has passed. The board of estimate, on the request of Health Commissioner Copeland, has appropriated $80,000 of special revenue bonds to the health department as an emergency fund with which to fight the epidemic. The department of health is not recommending the use of vaccines in combatting the epidemic.

OHIO

Service Physicians Banqueted.—The eleven physicians of Knox County who served during the world war were guests of honor at a banquet given by the Knox County Medical Society, January 13, at Mt. Vernon.

New Interest in Health Matters.—Public health affairs at Canton have taken on new life. Sentiment has been created in favor of adequate health protection so that $29,630 has been allowed by the city council as a budget for the first six months of the year, or $17,630 more than the last budget allowed. Applications are being received for chief medical officer, two physicians as full-time health officers, one chief nurse, four public health nurses, four food and meat inspectors, one chief of laboratory, one assistant veterinarian and one assistant clerk in the health office.

Personal.—Dr. James H. Lowe, for twelve years health officer of Piqua, has been reelected for a term of two years.——Dr. Guy T. Goodman, Mansfield, for nine years a member of the board of health and city health officer has resigned.——Dr. Ulysses G. Murrell, Wilmington, has been appointed registrar of the state bureau of vital statistics succeeding Dr. John E. Monger, Greenville, resigned.——Dr. Delbert J. Miller, Alliance, sustained a fracture of the jaw, and a number of cuts and bruises of the face and head when his automobile was struck by a train at a grade crossing.

Supervision of Hospitals.—The State Department of Health of Ohio has organized a bureau of hospitals and the bureau is now working out plans for carrying out the provisions of the new law enacted by the state legislature with reference to the supervision of hospitals. The latter are required to make reports to the state, and forms for the report have been prepared. Annual reports covering work done during 1919 will be filed, March 15. Under a resolution adopted by the legislature, the department is also undertaking a general survey of the hospital and dispensary facilities of the state, and these institutions are being registered as the first step in the study.

Organization Under New Health Law.—Columbiana, Warren, Morrow, Geauga, Pike, Auglaize, and Belmont counties are the first in the state to place their new general district health organization in operation. Columbiana county reports a budget of $10,000; Morrow, of $6,750; Warren, of $4,600; Pike, of $5,500, and Geauga, of $5,000, Columbiana, Morrow and Pike counties will receive the maximum state subsidy of $2,000 while the state aid for Warren County will amount to $1,600 and of Geauga County to $1,700. Columbiana and Morrow have appropriated $3,000 each for a health commissioner's salary and will probably be able to obtain whole-time officers. The other counties have made appropriations which will provide for parttime commissioners.

Protection Against Water-Borne Diseases.—Ohio is said to share with Massachusetts the place at the top of the list of states with sanitary control of public water supplies, with a score of 97 per cent. This protection has been effected by laws providing for state inspection and approval of all water supply projects and for state examination and supervision of supplies in use, allowing for all sources of possible danger. The state department of health shows that all but fifty of the 300 public water supplies of the state are of unquestionable purity; that only about 10 per cent. of the four million people served by public water supplies use water from doubtful or unsafe sources, and that only ten communities, with a population of 100,000, use water definitely classed as unsafe.

PENNSYLVANIA

Mont Alto to Be Enlarged.—The state has purchased several hundred acres of land contiguous to the department of health sanatorium at Mont Alto, and now controls virtually all the properties abutting the institution.

Board Has No Authority to Revoke Licenses.—Under a ruling made by Deputy Attorney General Swoope, January 9, the board of medical education and licensure has no authority to revoke the license of a medical practitioner who has been convicted of an offense while in practice, sentenced to the penitentiary and released on bail pending an appeal. It has no power to revoke either in the case of one convicted of repeated offenses or of one who has escaped conviction through legal technicalities until the appellate courts have passed on the appeal.

New Officers.—Allegheny County Medical Society at its annual meeting in Pittsburgh, January 13, elected Dr. John J. Buchanan, Pittsburgh, president; Drs. George C. Johnston, Pittsburgh, Thomas A. Miller, Bellevue, Robert W. Allison, Wilkinsburg, Gustav F. Berg, Pittsburgh, and Glenn M. Pierce, McKeesport, vice presidents; Dr. William H. Mayer, Knoxville, secretary, and Dr. Elmer E. Wible, Pittsburgh, treasurer.——Erie County Medical Society at its annual meeting, January 6, elected the following officers: Dr. Katharine H. L. Wright, Erie, president; Dr. John A. Darrow, Erie, Dr. Charles C. Kemble, Erie, vice presidents; Dr. James T. Strimple, Erie, secretary, and Dr. James E. Croop, Erie, treasurer.——Dauphin County Medical Society at its annual meeting in Harrisburg, January 6, elected the following officers: president, Dr. Hewitt C. Myers, Steelton; vice presidents, Drs. Richard F. L. Ridgway and John W. MacMullen, Harrisburg, and secretary, Dr. Charles M. Rickert, Millersburg.

Philadelphia

Personal.—Mayor Elect Moore has announced that Dr. Norman H. Taylor will be appointed as assistant director of health under Dr. C. Lincoln Furbush.

Influenza at Navy Yard.—One hundred cases of influenza developed at the League Island Navy Yard between January 21 and 23. There are no malignant symptoms, but every care is being taken to prevent its spreading. Social centers and meeting places at the navy yard have been closed.

Women's College Drive.—The campaign of the Women's Medical College, Pennsylvania, to raise $250,000 was opened, January 8. It is intended that part of this fund, if raised, will finance a department of preventive medicine. Sixteen thousand one hundred and eighty-seven dollars were pledged on the first day of the drive.

Third Smallpox Outbreak.—Following the discovery of two cases of smallpox in the northwestern section of the city, 1,500 persons within the boundaries of Thirty-First and Huntingdon and Thirty-Second and York streets were vaccinated, January 22. These cases were also traceable to the Georgetown, Del., area for both the man and his wife had paid a visit to Dagesboro, fourteen miles south of Georgetown. Up to January 23, 4,447 persons had been vaccinated following the three outbreaks.

City Prepared to Fight Influenza.—Should the emergency arise and influenza return to this city in epidemic form, the health department is preparing to meet it. The director asks that all cases be reported to the health bureau and laboratory tests are being made of all cases so far reported, that the exact nature of the malady may be determined. Four hundred beds at the Philadelphia General Hospital have been prepared and provisions made for an extra corps of physicians and nurses. The president of the traction

company has been requested to forbid overcrowding of cars and to insure proper ventilation. A bulletin has been issued by Dr. Walter S. Cornell, chief medical inspector of schools, that will reach every child in the public schools.

TENNESSEE

Negro Hospital for Bristol.—Funds are being raised to erect a $25,000 hospital for colored people at Bristol. It is proposed that the hospital be in charge of local colored physicians and that it be conducted on a cooperative basis.

Personal.—Dr. Robinson Bosworth, St. Paul, Minn., has given his services to Memphis for a few months, working in cooperation with the city health department in a campaign against tuberculosis.——Dr. Rufus P. Sullivan, Cleveland, has been elected physician of Bradley County.——Dr. James B. Cox, Huntington, has been reelected health officer of Carroll County.——Dr. John R. Thompson, Nashville, has been reelected health officer of Davidson County

Society Meetings.—At the eighth annual meeting of the Tennessee Academy of Science at Nashville, November 28, the following officers were elected: Dr. William F. Glenn of Vanderbilt University, Nashville, president, and Prof. C. F. Gordon of the University of Tennessee, Knoxville, editor.——At the joint meeting of the Nashville Academy of Medicine and Davidson County Medical Society, January 6, Dr. William C. Dixon was elected president; Dr. Samuel M. Bloomstein, vice president, and Dr. John Witherspoon, secretary (reelected).——Childs County Medical Society at its annual meeting in Pulaski, January 2, elected Dr. George D. Butler, Pulaski, president; Dr. William H. Cole, Minor Hill, vice president; Dr. Charles A. Abernathy, Pulaski, secretary, and Dr. George C. Grimes, Pulaski, treasurer.——At the annual meeting of the Mountain City Academy of Medicine and Surgery (colored), Chattanooga, the following officers were elected: president, Dr. Clarence F. Bass; vice president, Dr. Lewellen L. Patton; secretary; W. B. Davis, and treasurer, R .W. Allen.

TEXAS

Venereal Disease Clinic Discontinued.—The venereal disease clinics at Dallas and Galveston were closed, January 1, on account of lack of funds.

Personal.—Dr. Azariah W. Parsons, formerly chief surgeon of the Mexico national railroad in the city of Mexico, has located at Corpus Christi.—— Dr. William E. Huddleston, who has been taking graduate work in England has returned to Galveston.——Dr. Ethel M. Lyon Heard, Austin, has been appointed physician for women at the state university, Austin.

Hospital Items.—The City Hospital at Yoakum is being erected under the supervision of L. Harrington Company, architects. The cost will be $60,000.——Construction work is in progress on a new hospital at Taylor which is being built by Drs. Edmund Doak, Eric W. Stromberg and Thomas D. Vaughan, Taylor, and Dr. John H. Vaughan, Liberty Hill.

New Officers.—The Fourth District Medical Society at its annual meeting in Coleman, December 2 and 3, elected Dr. Samuel N. Aston, Coleman, president, and Dr. John M. Nichols, Bangs, secretary-treasurer. Ballinger was selected as the place of meeting for 1920.——North Texas District Medical Association met in Fort Worth, December 9 and 10, and elected Dr. Martin L. Wilbanks, Greenville, president; Dr. Marquis E. Gilmore, Fort Worth, vice president; Dr. David L. Bettison, Dallas, secretary (reelected), and Dr. Sidney J. Wilson, Fort Worth, treasurer. Waxahachie was selected as the next place of meeting.——Physicians of Eastland organized a medical society, January 9, to be known as the Medical Society of the City of Eastland, electing Dr. Herbert B. Tanner, president, and Dr. Edward C. Ferguson, secretary-treasurer.——Dallas County Medical Society at its annual meeting held, December 11, elected Dr. William T. Baker, Dallas, president; Dr. Henry B. Decherd, Dallas, vice president, and Dr. William W. Fowler, secretary-treasurer.

CANADA

Fight Venereal Diseases.—Preliminary organization has been completed for carrying out the campaign against the venereal diseases by the federal provincial boards of health of Canada. Dr. Charles A. Hodgetts, Ottawa, has been appointed chairman of the Ontario organization, and Dr. Robert R. McClenahan, Hamilton, secretary. Drs. John G. Fitzgerald, Toronto; Frederick Etherington, Kingston; Douglas G. Storms, Hamilton; Frederick W. Luney, London, are on the committee.

Guards Up Against Influenza.—The federal department of health reports that there is no information available that influenza is anywhere epidemic in Canada. All the provincial boards of health are on the watch for the disease. Especially is Ontario taking strict precautions against an invasion, and has already opened a register for physicians and nurses who will be prepared to join in any campaign toward controlling the malady.

Hospital News.—The General Hospital and the Western Hospital, Montreal, are going to amalgamate. It is hoped to make the combined hospitals the greatest institution in Canada, and a hospital act is being brought into the Quebec legislature to ensure the success of the scheme. It has been found no longer possible to finance the institutions separately and by the new arrangement financial aid is looked for from the province.——Toronto is going to have a new Reception Hospital. The site has been definitely decided on and is to be the old grounds of Trinity University. Efforts were made to have this hospital located near the General Hospital but without success. It has to be built by the city, but the administration is under control of the province.

GENERAL

Medical Officers for Poland Obtained.—Gen. Robert E. Noble has requested us to announce that the fifty medical officers required for duty for the Red Cross in Poland have been obtained, and that no further applications will be considered.

Addition to Hospital Site.—Senator Spencer of Missouri has introduced a joint resolution permitting the expenditure of $350,000 for the purchase of 26 acres of land contiguous to the Walter Reed General Hospital, Takoma Park, Washington, D. C.

Anesthesia Research Organization.—The National Anesthesia Research Society has been organized with the avowed purpose of collecting data and of prosecuting original research in the science of anesthesia. The research committee is headed by Dr. F. Hoeffer McMechan, Avon Lake, Ohio.

Sickness Insurance Discussed.—At the twentieth annual meeting of the National Civic Federation held in New York City, January 29 and 30, among the topics for discussion were "Compulsory Sickness Insurance and a Substitute for It." Frederick L. Hoffmann, a member of the committee of foreign inquiry, who has just returned from five months' study of the operation of the British National Health Insurance act, reported his findings.

Bill for Construction of Hospitals for Soldiers.—Senator France of Maryland introduced, January 24, a bill endorsed by the Public Health Service for the appropriation of $78,000,000 for the construction of hospitals for soldiers who are beneficiaries of war risk insurance. In connection with this legislation Senator France said:

> It is imperative that we should have legislation providing hospital facilities for diseased and disabled soldiers in the world war. Up until this time provision made for the treatment of these soldiers has been most inadequate, and many men who should be receiving treatment in hospitals are deprived of proper care because of neglect to provide hospital facilities.

It is estimated that at the present time the government is in need of hospital accommodations in the amount of 7,200 beds for general medical and surgical cases, of 12,400 beds for tuberculous cases and 11,000 beds for nervous and mental cases. The actual facilities of the Public Health Service at the present time are not in excess of 7,200 beds. Members of the American Legion have been making earnest protests because of the failure of the government to provide for proper care of our soldiers in hospitals. Throughout the West in many cities, tuberculous soldiers and those suffering from nervous and mental diseases are unable to secure any accommodation in government hospitals. An identical bill will be introduced in the House of Representatives.

Tariff on Scientific Instruments and Apparatus.—The subcommittee of the Senate Committee on Finance has completed its hearings and will meet, February 2, for final action on a bill placing a tariff on surgical and dental instruments and scientific and laboratory apparatus. The House of Representatives passed the bill fixing the tariff on these articles at 45 and 60 per cent., respectively. No opposition was made to this bill and it is likely that the committee will approve the house bill, which is designed to encourage the manufacture of these articles in the United States and avoid the danger of foreign competition. Representing the government

were Dr. W. F. Hildebrand of the bureau of standards; Lieut.-Col. M. A. Reasoner of the field medical supply depot, and Col. F. F. Russell, Army Medical School, and representing chemical and scientific societies were Mr. H. C. Parmalee and Dr Charles H. Herty.

Bequests and Donations.—The following bequests and donations have recently been announced:

Pennsylvania Hospital, Philadelphia, $1,000 and the residue of his estate in equal shares to the Jewish Maternity Hospital, Philadelphia; Jewish Seaside Home, Atlantic City, and National Farm School, Doylestown, by the will of Dr. John Moss, Jr.

Methodist Hospital, Philadelphia, $1,000 by the will of Louise M. Pepper.

St. Vincent's Orphan Asylum, Tacony, Pa., $1,000 by the will of Herman Buchborn.

Methodist Episcopal Church of northwestern Iowa as a site for a two-hundred bed hospital, a 280 acre tract at Sioux City, valued at $100,000, donated by Dr. William Jepson.

Campaign Fund of the Woman's Medical College of Pennsylvania, for the endowment of a scholarship in memory of his mother, Elizabeth Agnes Moore Deaver, a donation of $5,000 by Dr. Harry C. Deaver, Philadelphia.

Wichita Falls, Texas, for the endowment fund of a new hospital, a donation of $50,000 by J. A. Kemp.

Medical Department of the University of Pennsylvania, Philadelphia, for the establishment of a chair of gynecology, a bequest of $50,000 by the estate of Dr. William C. Goodell.

Senate Appropriates Half Million Dollars to Combat Influenza.—The Senate has passed a joint resolution appropriating $500,000 to be used by the Public Health Service in combating influenza. The resolution directs the Public Health Service to investigate influenza and allied diseases in order to discover their causes and prevent their spread. It requires the allotment of money to universities, colleges and other research institutions for scientific investigation. The Public Health Service is accorded the privilege of making selection of such institutions. A forceful debate occurred in the Senate prior to the adoption of the resolution, Senator King of Utah opposing the resolution and objecting to the "constant encroachments of the Public Health Service organization." He said: "We will soon have the United States furnishing doctors, nurses and hospitals for all the people, with the result of hundreds of millions of dollars being taken annually from the people." The resolution originally provided for an expenditure of $1,000,000. Senator France in charge of the resolution acquiesced in the amendment, reducing the amount to $500,000. The resolution now goes to the House of Representatives.

League of Red Cross Societies.—The International Red Cross Committee has issued a call for the first convention of the general council of the League of Red Cross Societies, to be held in Geneva, March 2. The league was founded in Paris, May 5, 1919, by the national societies of the United States, Great Britain, France, Italy and Japan, with which the societies of many other countries have since joined. Control is vested in a general council composed of representatives of all member societies, but in the intervals between the regular meetings this control is exercised by a governing board of fifteen members, of which Henry P. Davison, American Red Cross, has been elected chairman. At a preliminary conference in Cannes, April, 1919, the establishment of a bureau of health with a director, advisory council and permanent staff was recommended. The tentative program includes an intensive campaign against typhus fever, the extension and development of child welfare work, and the encouragement of worldwide adoption of definite programs for establishment of public health laboratories, for compulsory registration of vital statistics, and for the control of tuberculosis, venereal diseases and malaria. The permanent headquarters of the league are at 9 Cour de St. Pierre, Geneva, Switzerland.

Cumming, Surgeon-General, U. S. Public Health Service.—As we go to press the newspapers announce that the President has nominated Dr. Hugh S. Cumming as Surgeon-General of the U. S. Public Health Service to succeed Surgeon-General Rupert Blue, whose second term expired January 13. Born at Hampton, Va., August 17, 1869, Dr. Cumming was graduated M.D. from the University of Virginia in 1893, and from the University College of Medicine, Richmond, in 1894. He was commissioned assistant surgeon May 25, 1894, passed assistant surgeon five years later, attained the rank of surgeon March 15, 1911, of senior surgeon Nov. 8, 1918, and was appointed assistant surgeon-general March 6, 1919. Dr. Cumming's professional interest has been mainly in the field of preventive medicine and quarantine. Prior to the war, he was for some years stationed at the Hygienic Laboratory in Washington, before which time he had seen many years of service as chief quarantine officer at San Francisco and other ports. He is a frequent contributor to the literature of sanitary science and has made intensive studies of pollution of watersheds with special reference to the shellfish bearing areas, the results of which are embodied in public health bulletins issued by the government. At present he is on duty at Constantinople in connection with a concerted campaign for the control of typhus fever. During the war Dr. Cumming was detailed for special duty with the Navy Department.

Midwinter Conference on Public Health and Legislation.—The annual Midwinter Conference on Public Health and Legislation will be held Thursday, March 4, 1920, in the South Parlor, Auditorium Hotel, Michigan Avenue and Congress Street, Chicago. The program will be as follows:

Morning.—

1. Call to Order, 9:30 a. m.
2. Chairman's Address, Dr. Victor C. Vaughan, Ann Arbor, Mich., chairman, Council on Health and Public Instruction, American Medical Association.
3. Secretary's Report, Dr. Frederick R. Green, secretary, Council on Health and Public Instruction, American Medical Association.
4. "Standardization of Public Health Activities," Dr. George E. Vincent, president, Rockefeller Foundation.
5. "Standardization of State Public Health Organizations," Dr. Charles V. Chapin, commissioner of health, Providence, R. I.
6. "Standardization of Municipal Health Organization," Dr. Allen McLaughlin, Assistant Surgeon-General, U. S. Public Health Service.
7. General Discussion, opened by Dr. C. St. Clair Drake, commissioner of health, Springfield, Ill., and Dr. Ennion Williams, commissioner of health, Richmond, Va.

Afternoon, 2 p. m.—Symposium on "Health Education of the Public."

1. "Health Education in the Public Schools—Thirty Years' Experience in Michigan," Dr. Victor C. Vaughan, Ann Arbor, Mich.
2. "Health Education and Activities in College and Universities," Dr. John Sundwall, director, Students' Health Service, University of Minnesota, Minneapolis.
3. "Health Education a Function of Municipal Health Department," Dr. Haven Emerson, New York.
4. "Health Education a Function of State Health Department," Dr. W. S. Rankin, secretary, state board of health, Raleigh, N. C.
5. "Health Education a Function of the Federal Government," Dr. Charles V. Bolduan, director, Division of Public Health Education, U. S. Public Health Service.
6. Discussion opened by Dr. John M. Dodson, Chicago; Prof. W. B. Owen, superintendent, Chicago Normal College.

FOREIGN

American Hospital in Poland.—A new hospital has been opened at Vilna, Northwest Poland, by the American Red Cross.

Congress for History of Medicine.—The Société française d'histoire de la médecine has organized an independent congress for the history of medicine and pharmacy, to be held at Antwerp, Aug. 7 to 12, 1920, at the same time as the Kermesse and the festival of the seventh Olympiad. Among the principal subjects appointed for discussion are medical iconography and epigraphy; medical bibliography, and a chapter from the history of public charities (hospitals, etc.) in every country.

Personal.—Dr. Paul Sabatier, Toulouse, and Pierre Paul Emile Roux, Paris, have been elected honorary members of the British Royal Association.——Dr. Hanz Gertz of the Physiological Laboratory of Karolinska Institut, Stockholm, has been awarded the Jubilee Prize by the Swedish Medical Association for his work on the functions of the labyrinth. ——Dr. Harold Pringle, lecturer on histology and assistant in physiology in the University of Edinburgh, has been appointed professor of physiology in Trinity College, Dublin, succeeding the late Sir Henry Thompson.

Memorial for the Interns of Paris Hospitals.—In memory of the interns and former interns of the hospitals of Paris who gave their lives for their country, a memorial service was held in turn recently in the Roman, the Protestant and the Jewish places of worship. A monument is to be erected to perpetuate their memory. It will stand near the entrance of the Hotel-Dieu, and bear the names of all the interns and ex-interns who died for France. Subscriptions for the monument are to be sent to M. Arnette, 2, rue Casimir-Delavigne. The Société médicale des hôpitaux started the subscription list with 1,000 francs.

Interallied Graduate Course on Tuberculosis at Paris.—This course of lectures on various phases of the organized fight against tuberculosis has been organized by the Ecole interalliée des hautes études sociales, 10, rue de la Sorbonne. The lectures are held Tuesday afternoons at 5:30. Calmette will speak on tuberculosis in the invaded regions; Rist, on the partisans of compulsory declaration; a member of the lower house, on legislation on tuberculosis; Mlle. Chaptal, on private works, and others on the stand of labor in regard

to declaration, on the work of the Red Cross, the climatic resorts of France, etc.

Semicentennial of the "Correspondenz-Blatt."—With 1920 the important Swiss weekly, the *Correspondenz-Blatt für schweizer Aerzte*, enters on its fiftieth year. Instead of the previous book page, 7 by 9½ inches, it appears in a new form, the pages about 10 by 13 inches. This change is made, it is stated, principally on account of the advertisers. The name of the weekly is also changed to the *Schweizerische medizinische Wochenschrift*, but the editors, publishers, and the principles of the journal remain the same. It always publishes the reports of the various medical societies in both German and French Switzerland, and the original articles are published indiscriminately in German or French. In its new dress it falls into line with the weeklies of Germany and Austria.

Death of Severin Jolin.—The death of the newly appointed president of the Swedish Medical Association is reported, Prof. Severin Jolin, incumbent of the chair of chemistry and pharmacology at Stockholm and since 1917 at Upsala. He has published numerous works on chemistry and pharmacology and on the newer remedies, and was the representative of Sweden at many international scientific gatherings. To him is ascribed in large part the high standard of the Swedish Pharmacopeia as he has taken an active share in the revision of the different editions. Several years of research on the thyroid, especially on its iodin content, led him to the conclusion, in 1906, that iodin is not an indispensable element in the thyroid, but is merely stored there when there happens to be an excess of iodin in the body.

Deaths in the Profession.—In Italy, Dr. **Antonio Riga,** aged 87, of Riga's disease fame. He described it in 1881 as pseudomembranous sublingual frenulitis. Riga's disease is now defined in the dictionaries as cachectic aphthae.——Dr. **H. Gerber,** professor of laryngology at the University of Königsberg.——Dr. **V. Mucha,** formerly director of the Vienna general hospital, aged 76.——Dr. **O. Tunmann,** professor of pharmacognosy at the University of Vienna.——Dr. **B. Baginsky,** privat-docent of ear, nose and throat diseases at the University of Berlin.——**Sir Thomas Richard Fraser, M.D.,** Edinburgh, 1862; F.R.C.P., Edinburgh, 1869; formerly president of the Royal College of Physicians, the Medico-Chirurgical Society, the Royal Medical Society, Edinburgh, and the Association of Physicians of Great Britain and Ireland; president of the England Plague Commission from 1898 to 1900; died at his home in Edinburgh, January 5.

The International Health Resort Congress at Monaco.—Great preparations are being made for the Congress for the Expansion of Climatic, Mineral Springs and Baths, and Sea-Bathing Health Resorts which is to be held at Monaco in April. All the Allied and friendly nations have been invited to participate, and preparations have been under way for this congress since early in 1916. It aims to acquaint the world with what these countries have to offer in the way of health resorts, and an exposition in connection will open April 20 and continue into 1921. The exposition will comprise a section for historical objects of interest in this line, a scientific and therapeutic exposition of the various spas, etc., a section of views and data for tourists, a moving picture section, and an industrial and commercial exhibit. There are in fact to be six separate congresses: (1) hydrology and geology; (2) hygiene and climatology; (3) thalassotherapy; (4) spas, seaside and mountain health resorts; (5) mountain climbing (alpinism); (6) touring.

Honors for American Women Physicians in France.—The *Journal officiel* for Dec. 22, 1919, gives a list of seven American medical women honored by the French government with the Gratitude of France medal. Four are said to have served with the utmost devotion at the Hôpital des dames américaines at Luzancy "where the populace had not had any surgical care during the preceding four years of the war": Dr. Charlotte Fairbanks (from St. Johnsbury, Vt.) "performed more than 500 operations and tended the people with extreme devotion;" Dr. Inez A. Bentley (from Kings Park, N. Y.) "by her incessant efforts maintained the equipment of the medical and surgical wards and served as subdirector of the hospital;" Dr. Mary L. Evans (from Middletown, Conn.) "rendered most devoted services to the people" as bacteriologist, director of the laboratory and pharmacy of the hospital, as also Dr. Mary MacLachlan (from Middletown, Conn.) director of the hospital and dispensary. The official list includes further Dr. Mary E. Lapham (from Highlands, N. C.) of the American Red Cross "for her untiring efforts in organizing and conducting a clinic at la Rochelle;" and Dr. Jay Manwaring (from Norwich, Conn.) "for the medical services rendered by her for two years to the people of thirty villages in the Château-Thierry region." All the above were silver medals. A bronze medal was awarded further to Dr. Edith (Elizabeth?) Mercelis (of Montclair, N. J.) who "helped to organize and conduct a number of *œuvres* for the benefit of France." The list is reproduced in the first issue of the *Presse médicale* for 1920.

LATIN AMERICA

Influenza in Cuba.—It is reported from Havana that there are over 6,000 cases of influenza in that city.

Dr. Leiva Returns to Bogatá.—Dr. Leiva Pereira has returned to Bogatá after several years of absence. During the war he volunteered his services in French hospitals and has been decorated by the French government. He was also decorated by the American Ambulance which went to France at the beginning of the war, where Dr. Leiva demonstrated and applied an apparatus he had devised for treatment of fracture of the humerus.

Deaths in the Profession.—Our exchanges mention the death, October 22, of Dr. **Pedro Maria Ibañez,** one of the founders of the Academia Nacional de Medicina of Bogatá, a leader in the progress of science in Columbia, and author of numerous works, including a history of medicine in Colombia.——From Vera Cruz is reported the death of Dr. **Esteban Rojo,** a Cuban physician who had lived in Mexico for more than thirty years, three of whose sons are physicians.

The Recent Earthquakes in Mexico.—According to a letter just received from a Vera Cruz physician, the recent earthquakes caused untold damage and suffering in that region. The trepidation still continues and hills and mountains keep on falling down or breaking apart. San Miguel, a very high peak not far from the Orizaba volcano, broke apart some three kilometers in its center, giving origin to a new volcano which spurts enormous quantities of boiling water that destroys everything in its path. So far fifteen towns have been destroyed by this water. At Jalapa the victims exceed 10,000 and the wounded are also very numerous. Many oil wells are flowing unchecked, and measures will have to be taken to prevent a conflagration. Physicians were among the first to render assistance throughout the territory affected. The representative of the White Cross at Vera Cruz furnished all the medical supplies he had on hand to treat the emergency cases.

Death of Dr. Liceaga.—Dr. Eduardo Liceaga, one of the most prominent physicians and sanitarians of the western continent, died, January 15, at his home in Mexico City. He was for many years president of the national public health service, and had to his credit the stamping out of yellow fever, practically throughout Mexico. He also established the Pasteur Institute of Mexico City, the Maternity Home and Children's Hospital and was responsible for having brought the sanitary service of that country to a high degree of excellence before the recent disturbances began. In recognition of his many services to the cause of medicine in Mexico, he was appointed honorary president of the Mexican Medical Association on its organization, a few months ago. Dr. Liceaga was well known in this country, having attended many medical and sanitary meetings and participated actively in the various international sanitary conferences held in Washington. He was also a member of the International Sanitary Bureau of Washington since its foundation until his resignation as head of the Mexican Public Health Service. Dr. Liceaga was the author of numerous contributions on sanitary subjects, especially yellow fever.

CANAL ZONE

New Society Officers.—At the one hundred and sixtieth meeting of the Medical Association of the Isthmian Canal Zone held at Ancon, December 19, the following officers were elected: president, Dr. Wallace E. Hubbard; vice president, Dr. Cornelius D. Briscoe, and secretary-treasurer, Dr. Nathan B. Kupfer, all of Ancon.

Civil Service Examination.—The United States Civil Service Commission announces open competitive examinations for physicians in the Panama canal zone service to be held, February 18 and March 17. These positions are open to men and women, with a beginning salary of $200 a month, increasing to $300 or more. Applicants must be unmarried, must have had at least one year of graduate hospital experience, and must be between 22 and 31 years of age, unless entitled to preference because of military or naval service.

Government Services

Health Conditions of the Army

The weekly summary of health conditions in the army for the week ending January 16 indicates a higher admission rate and noneffective rate than previously, due to the prevalence of epidemics of mild influenza, complicated in some cases also by pneumonia. The disease was especially prevalent in Camps Grant, Custer, Dodge and Fort Sheridan. Among the American Forces in Germany fewer cases of influenza were reported than for the previous week, while pneumonia and measles showed a slight increase.

Report of Surgeon-General of the Public Health Service

Surgeon-General Blue points out that the United States Public Health Service, through new legislation, has had its work extended to include a division of venereal diseases, a reserve for the Public Health Service and certain activities under the War Risk Insurance Act. The service has outlined an "After the War" program to increase sanitation, to prevent epidemic and other diseases, and to raise the standard of physical health. The program calls for the active cooperation of federal, state and local health authorities, as well as volunteer health agencies. The Division of Scientific Research has made investigations of many diseases, sanitation and sewerage and the pollution of navigable streams and lakes. It has also studied rural sanitation, interested itself in the prevention of the spread of trachoma and, through the hygienic laboratory, controlled the sale of viruses, serums and antitoxins. Special studies have also been devoted to pellagra. Industrial physiology was studied with the assistance of Dr. Frederick S. Lee, who is in the reserve corps, and special educational courses were given by consulting hygienists, C. E. A. Winslow and E. R. Hayhurst. Throughout the report appear the names of well known hygienists and sanitarians whose services have now been made available through the passage of the reserve act. Special sections of the report are devoted to the hygienic laboratory, the domestic quarantine division, extra-cantonment zone sanitation, maritime quarantine, sanitary reports and statistics, also to public health education, marine hospitals, venereal diseases, etc.

Under the heading "Needs of the Service," it is pointed out that most important is the provision of an adequate building for the bureau in Washington. During the past two years the service has experienced the greatest expansion in its history and now occupies space in several widely separated buildings.

He also requests much increased appropriation in order to carry into effect the extensive "After the War" program to provide for additional publicity for public health education.

A pleasing feature of the report is the statement of the names of the personnel of the various divisions, giving credit to those whose united efforts have made the growth of the service and its efficiency possible.

Government to Sell Medicines and Hospital Supplies to Hospitals and Institutions

The director of sales of the War Department has announced that the Surplus Property Division, Office of the Quartermaster General of the Army, will offer for sale quantities of drugs, surgical instruments, surgical dressings, and hospital equipment. The fixed prices will be materially below present market quotations. State and municipal hospitals, free clinics and similar institutions will be entitled to purchase for a period of thirty days, beginning Jan. 29, 1920, and ending Feb. 29, 1920. The materials to be sold were bought by the War Department for use during the war and have been declared surplus because the quantities on hand are in excess of the Army's present requirements. A list of materials, showing the quantities available, location, price and other necessary information may be obtained from any Zone Supply Officer or from the Surplus Property Division, Munitions Building, Washington, D. C. The prices quoted are f.o.b. point of storage. A certified check, cash or liberty bonds, amounting to 10 per cent. of the total purchase must accompany all orders together with shipping instructions when purchase is made by other than state, county, or municipal institutions. A ninety-day credit will be granted to purchasing agents of state, county, or municipalities when requested and no deposit is required by them. All other purchasers will be required to make payment in full before the materials are delivered.

The sale of narcotics will only be made to the classes of persons who have registered and paid a special tax as required by the Harrison narcotic law. Any hospital, institution, or purchasing agency representing charitable organizations in different cities or counties may purchase the entire quantity of any one or a number of items and may resell, issue or divide any portion with other hospitals or charitable institutions. The government, however, will not permit the resale of any of the articles at prices above those paid to the government except that handling charges may be added.

Orders may be made through the nearest of the following Zone Supply Offices: Army Supply Base, Boston, Mass.; 461 Eighth Avenue, New York; 21st Street and Oregon Avenue, Philadelphia; Coca Cola Building, Baltimore, Md.; Transportation Building, Atlanta, Ga.; Army Building, 15th and Dodge Streets, Omaha, Neb.; Fort Mason, San Francisco, Calif.; 17th and F Streets, Washington, D. C.; Newport News, Va.; Jeffersonville, Ind.; 1819 W. Thirty-Ninth Street, Chicago, Ill.; 2d and Arsenal Streets, St. Louis, Mo.; Audubon Building, New Orleans, La.; San Antonio, Texas; New Cumberland, Pa.; Columbus, Ohio; or to the Surplus Property Division, Munitions Building, Washington, D. C.

Foreign Correspondence

LONDON

Jan. 10, 1920.

Sir William Osler

The great gap in the profession made by the death of Osler is manifest in the pages of tribute in the journals by the leaders of the profession. The finest is by the man he affectionately called his "brother Regius of Cambridge"—a kindred spirit as suggested in the previous notice. Writing in *Nature* (a scientific journal) Sir Thomas Clifford Allbutt speaks of Osler bringing to Oxford, "as gifts from the new world, an openness and simplicity of mind and conversation, a frankness and generosity of temper, a freedom from the frost and weight of custom, and a pioneer's command of affairs, which made him as delightful a fellow worker as he was clear-sighted and effectual. Oxford took him to her heart as her own; there as one of her own he rested. And if Osler had not also to capture Great Britain, as he captured Oxford, it was because Great Britain was already his mistress. Indeed, there was not a school of medicine in the Old World where his presence was not almost as well known and his friendship as precious as in the New. It was characteristic of him that a few days later he obtained leave from Oxford to spend some months in Paris, during which he regularly attended the clinics of the great hospitals at 7:30 a. m., like an ordinary student. Of his contributions to knowledge it is as hard to make a list as it would be for Socrates. They were many, no doubt, but consisted even more in his insemination of other minds, in personal teaching and influence on his disciples. His great textbook had many and almost singular merits. It was always helpful in any quest to turn to it, because, if but in a word or the turn of a sentence one perceived that the latest and best researches, if not presented in detail, were known to the author. Thus the work was not a provider only but also to the wise an indicator. Perhaps his most original and valuable researches were in the field of the diseases of the spleen and blood; but he made eminent contributions also to the study of the infections of the heart, of angina pectoris, of malaria, and of many minor maladies. But, the most modest of men, his conversation was always of the good work of others, silent on his own."

In the *British Medical Journal*, Sir Humphrey Rolleston, president of the Royal Society of Medicine, pays a personal tribute: "Perhaps the most remarkable of his many gifts was that of rapidly making and then permanently retaining friendships. To see him speak to, and place at his ease as naturally his equal, a young man somewhat in awe of a famous leader of his profession, seemed an easy matter in his hands, and no doubt was the outcome of a wonderful sympathy that never failed, and at the same time was never

obtrusive or other than natural in a very human man. This made him the same age as his companion, and indeed, much as he loved old men, he delighted in meeting the young. To a mother in terrible distress for the loss of a son in the war he was the gentlest of comforters. In spite of his bravery he was never the same after his only son was killed. There was no trace of the wall between the generations that the years so often build up, and probably few ever realized how strange this was. His encouraging and stimulating attitude to young men made Oxford a Mecca to which there was a constant flow of pilgrims, especially from Canada and the United States, all certain of welcome. Annoyance, irritability or personal feeling of any kind was impossible to imagine in connection with his sunny temperament; that this was part of his philosophy of life is obvious in his charming address "Aequanimitas," and his attitude to his professional brethren finds expression in another address on "Unity, Peace and Concord." Though a shrewd judge of character, neither his opinion nor the reason for it, if unfavorable, was given unless there was some urgent reason, and then the man's surroundings were blamed or a semi-humorous phrase settled the question without further affecting reputation. His literary style was epigrammatic, with apt illustrations, attractive from its classical flavor, and with the distinction conferred by his easily discernable personal touch. This was the feature of his popular textbook, so remarkable for its up-to-date picture of our science. His output was enormous, and it was a puzzle how with innumerable engagements outside and an open house, very rarely without its complement of visitors, he found time to read and work. To see him examine a case was a lesson in thorough clinical observation and not least because the patient's interest was not forgotten in that of the case."

A pathetic incident is the fact that the Collection of Essays in celebration of Osler's seventieth birthday, presented by friends and pupils on both sides of the Atlantic, arrived at Oxford only two days before his death and were never seen by him. His body, which rested overnight in Christchurch Cathedral, Oxford, close by the monument of Richard Burton, one of the great dead to whom he was devoted, was brought by road to London for cremation. The family desired that the ceremony should be strictly private. Lady Osler, her sister, the late Sir William's brother, and the physicians and nurses were present. The ashes were placed in an urn and taken back to Oxford. They will probably be sent to Canada for burial, but a final decision has not yet been taken.

State Rewards for Medical Discoveries

An important report has been issued by a joint committee of the British Medical Association and of the British Science Guild, which has been considering the question of awards for medical discoveries. The committee defines medical discoveries as being: (1) the ascertainment of new facts or theorems bearing on the human body in health and on the nature, prevention, cure or mitigation of injuries and diseases; (2) the invention of new methods or instruments for the improvement of sanitary, medical and surgical practice, or of scientific and pathologic work. The reasons given for rewarding medical discoveries are the encouragement of medical investigation and the discharge of a moral obligation incurred by the public for its use of private effort. The various possible types of rewards are cited as: titles and honors given by the state, by universities and other public bodies; prizes and medals; patents; promotion and appointments; pecuniary rewards by the state. Concerning the general principle of assessment, the committee hold that, in the interests of the public, all medical discoveries should if possible receive some kind of acknowledgment or recompense. But in view of the variable conditions, nature and effects of particular investigations, it will often be difficult to assess the kind of recompense suitable. In the first place, a distinction should be drawn between compensation and reward. By compensation is meant an act of justice done to reimburse losses; by reward an act of grace in appreciation of services. The following different cases should be considered: A. Discoveries involving pecuniary or other loss either by direct monetary sacrifice or by expenditure of time, or by diminution of professional practice, without corresponding pecuniary gains. An example is that of Jenner, who occupied himself so closely with the investigation of vaccination that he lost most of his medical practice and also a considerable sum in expenses. This was fully acknowledged by Parliament, which granted him $150,000. B. Discoveries that have increased the professional emoluments of the investigator by enhanced practice or other means. Such are frequently improvements in surgical operations or medical treatment, which leads to increased practice. Another case is that of serums, etc., which may have been protected and put on the market. Here compensation cannot be demanded, and pecuniary rewards are generally unnecessary. On the other hand, honors are often and justly bestowed for such work. C. Discoveries that involve neither gain nor loss to the investigator. This class includes most of the good and sometimes great clinical, pathologic and sanitary discoveries. Here also compensation can scarcely be demanded, and honors are already often given, but pecuniary awards should sometimes be bestowed as an act of grace when the value of a discovery greatly exceeds the emoluments of the investigator. This principle should hold even for men who are directly paid for undertaking the research, especially when such payment is (as usual) small and the discovery great. Special attention is drawn to: (1) men who have refused lucrative posts to complete researches; (2) men who have refused to protect their work for fear of limiting its application, and (3) men who have carried out investigations for governments for little or no payment, on patriotic grounds.

In the public interest, the committee insists on these principles: 1. No medical discovery should be allowed to entail financial loss on him who has made it. 2. Compensation or reward should be assessed as equal to the difference between the emoluments actually received and those which a successful clinician might have received in the same time. Additional reasons for this are that few medical discoveries are patentable, and they seldom give good grounds for promotion or for administrative appointments in the public services. Whether a particular discovery shall receive large or small assessment will depend, in addition, on these considerations: 1. Width of application. For example, the work of many of the older anatomists, physiologists, and parasitologists, of Pasteur and of investigators of immunity, have affected most recent discoveries. Discoveries on widespread diseases, such as the work of Lister, Laveran or Koch, are often more important than those on more limited maladies. 2. Difficulty of the work done. The solution of a difficult problem requires more study and also more time and cost, and therefore deserves more recompense than a chance observation. 3. Immediate practical utility. A strong plea can be made for state remuneration in cases of this kind unless they come under Class B. Curiously, they never receive it, and academic recognition is also often not forthcoming. 4. Scientific importance. Discoveries not of practical utility may become so at any moment and should be included in the scheme if sound and of wide application.

During the last few years, the British government has disbursed an annual grant of about $300,000, under the Medical Research Committee, for subsidizing investigations authorized by the committee and carried on by workers selected by it. This grant does not remunerate discoveries already made, but proceeds on the principle of payment for prospective benefits. The principle of payment for benefits already received should also be followed, as in other countries. Payment for prospective benefits is good business only when some return is almost certain. Hence subsidizing researches most frequently deal with simple and straightforward questions, admitting of immediate experimental reply. But most of the greatest medical discoveries were built on a much more speculative and uncertain basis by men who neither sought nor received subsidies—such men as Jenner, Sims, Simpson, Lister, Koch, Laveran, Bancroft, Manson, Bruce, Mackenzie. Surely the state should encourage this class of investigation also, because it costs the state nothing in the doing and seems to achieve the greatest results. This can be done only in one way—by payment. There are at present in this country hundreds of physicians and others who have the knowledge, the brains and the opportunity for private independent discovery, without subsidies, but who do not attempt it because medical research work does not pay even when brilliantly successful. They should be brought into the fold of research by the offer of a reward when they succeed.

Fatal Anthrax from Japanese Shaving Brushes

The contraction of anthrax from shaving brushes imported from Japan has been reported before in THE JOURNAL (Dec. 13, 1919, p. 1849). The Ministry of Health now announces that several other cases have occurred, two of which have been fatal, and that in a substantial proportion of the cases the infection was from new brushes recently imported from

Japan. The government is taking steps with regard to further importation. The ministry recommends the following process to any person who has any doubt as to a shaving brush, but does not suggest that it is a certain safeguard against infection: Thoroughly wash the hair of the brush with soap and warm water to which a little washing soda has been added, rinse in warm water, and then immerse for one hour in a solution of liquor formaldehydi. The disinfecting solution should be at a temperature slightly above the body heat. After removal the brush should be allowed to dry before use. Care should be taken not to allow the hair to come in contact with the hands.

Research Work at the Zoological Gardens

The prosectorium at the Zoological Gardens, used for research in comparative anatomy, has been reconstituted, and Professor Leiper of the London School of Tropical Medicine has been appointed director. As temporary lieutenant-colonel in the army he worked out the life history of *Bilharzia haematobia*. Since the days of Owen and Huxley the bodies of animals which die in the Zoological Gardens have been used for research in comparative anatomy. A succession of distinguished prosectors and many well known surgeons and zoologists have added to knowledge of the higher vertebrates by work at the gardens. Shortly before the war, the work was extended so as to include routine pathologic investigation into the causes of death.

PARIS

Dec. 24, 1919.

The Example Set by the United States in Matters of Hygiene

Though the war caused great sorrow and brought many afflictions, it has brought also some blessings. It facilitated the exchange of ideas between the allied nations and thus led to a better acquaintanceship and a closer union. This is particularly true with respect to the United States and France. During the progress of the war numbers of Frenchmen were put in a position to appreciate American methods and institutions. In matters of public hygiene, especially, the United States exerted a salutary influence. At the sixth annual meeting of the Société de médecine publique et de génie sanitaire, which was held recently in the Institut Pasteur, Prof. S. M. Gunn, assistant director of the Rockefeller Foundation Commission, reported the results of the hygienic crusade that was undertaken by the commission in the schools of the department of Eure-et-Loire, which followed the plan adopted for the schools of the United States. The success of this campaign has been so encouraging that the commission hopes to be able to put this branch of public health work on a permanent footing in all of France.

Similarly, various plans for reforming hygienic instruction in the medical schools owe their inspiration to the work done in the United States. For example, it is coming to be recognized that hygienic instruction must consist of two distinct stages: first, an elementary course which all students must pursue, and second, an advanced elective course for older students. Dr. Paul Courmont, professor of hygiene at the Lyons Faculty of Medicine, has already introduced these two courses. Dr. Léon Bernard, professor of hygiene at the Paris Faculty of Medicine, thinks that, following the example of the United States, a series of courses in hygiene should be established to prepare specialists in hygienic work. He advocates the following three courses: (1) a course preparing candidates for the special duties of public health officers (director of public health, state [departmental] inspector, marine public health officer); (2) a course preparing candidates for the special duties of medical inspector of schools, and (3) a course preparing for the duties of dispensary physician and director of antituberculosis sanatoriums, to be followed by a term as assistant in such establishments.

The Campaign Against Charlatanism

The Société de médecine publique et de génie sanitaire, in view of the fact that a form of charlatanism that is dangerous to public health is practiced by a number of physicians and by certain pharmacists and industrials, has given formal expression to the opinions that it entertains in the matter: 1. Certain forms of charlatanism practiced by various doctors of medicine are detrimental to the medical profession, and for that reason it would be well to take up the matter with the Union des Syndicats médicaux. 2. The Société de médecine legale, which has appointed a committee to study into the various forms of charlatanism in vogue, should be asked to determine just what the legal status is of certain establishments that pompously assume the name of "institutes," and certain anonymous personalities who affirm to be able to cure all diseases within an improbable time limit should also be investigated. 3. The Service de la répression des fraudes should be requested to take more energetic action against vendors of pharmaceutical products and hygienic apparatus when it can be shown that the merchandise in question is sold under false pretenses. 4. It would be well to prohibit the publication, in any journal, of advertisements of any pharmaceutical products other than those approved by a competent commission or council composed in part of members of the Syndicat des pharmaciens et des droguistes.

Ceremonies Held at the University of Paris

The council of the University of Paris has decided to hold special exercises each year in celebration of the reopening of the school. This year it was only natural that the event should take the form of memorial exercises in honor of our dead heroes. The services that the University of Paris rendered during the war were also called to mind. The ceremonies were held in the large amphitheater of the Sorbonne, at the conclusion of which the rector of the university conferred the title of doctor honoris causa on Sir Frederic Pollock, English counsellor at law; Dr. Brachet, professor at the University of Brussels; Vito Volterra, Italian senator, dean of the faculty of science in Rome; M. Nyrop, professor at the university of Copenhagen, and H. G. Greenich, dean of the school of pharmacy in London. Previously, only one title of doctor honoris causa had been granted by the University of Paris, and was conferred last year at this time on President Wilson, by reason of his having been president of the University of Princeton.

The university has decided to hold special religious services in memory of its faculty members and its students who died for their country.

Action in Memory of the Physicians Who Died for France

At the instance of the Paris Faculty of Medicine, all faculties and schools of medicine, all medical and scientific organizations, and all student associations have decided to solicit subscriptions for a fund to be used in exalting the memory of the 1,600 physicians and medical students who died for their country. In every regional center of school or faculty, and in the principal groups of professional societies committees are to be appointed to take charge of the propaganda and to receive subscriptions.

The amount so subscribed will be used: 1. For the publication of an elaborate work containing the names of the heroes and the citations that have been accorded them; this book will be put on sale and the proceeds will revert to the subscription fund, copies of an edition de luxe being given to those who subscribe forty francs or more. 2. For the erection in Paris (near the Faculté de médecine) of a monument that shall be in keeping with the important services rendered during the war by the medical corps as a whole. An appeal is made to all French physicians, to the physicians of allied countries, to the families of these dead heroes, and to all those who, during the war, became indebted to the physicians for their life and health. Subscriptions may be sent to Dr. Bongrand, trésorier général du Comité, 6, rue Villaret-de-Joyeuse, Paris-XVII.

Marriages

CARL ASHTON BROADDUS, Lieut., M. C., U. S. Navy, to Miss Virginia Courtney Henshaw of Carolina County, Va., at Washington, January 15.

JOSEPH ANTHONY PESSOLANO, Philadelphia, to Miss Florita Marie de Dominicis of Albany, N. Y., at Philadelphia, November 19.

EDWARD H. MORIARTY, Mt. Clemens, Mich., to Miss Estella Doyle of Chatham, Ont., January 13.

SIDNEY KALLAWAY, Philadelphia, to Miss Ella M. Lee of Shamokin, Pa., December 3.

HENRY MELVIN LEE, to Miss Clara Harris, both of Minneapolis, December 27.

Deaths

John Van Rensselaer Hoff ✠ Colonel M. C., U. S Army (retired), Washington, D C.; one of the most distinguished officers of the Medical Corps and leader in the movement by which the medical department became a staff corps; died in Walter Reed Hospital, Washington, D. C., January 14, after a surgical operation for septic gall bladder. Colonel Hoff was born at Mount Morris, N. Y., April 11, 1848; the son of Brevet Colonel Alexander H. Hoff, Medical Department, U. S. Army, and Eliza Van Rensselaer. He was graduated from Albany, N. Y., Medical College, in 1871, and also from the College of Physicians and Surgeons in the City of New York in 1874. In the same year he was appointed First Lieutenant and Assistant Surgeon, U. S. Army, in 1879 he was promoted to Captain, and Assistant Surgeon, and to Major and Surgeon in 1891. He organized the first detachment of the hospital corps in the Army at Fort Reno, I. T., in 1887, and the first company of instruction hospital corps, at Fort Riley, Kan., in 1891. He was also recommended for brevet and medal of honor in the Sioux Campaign in 1890 and 1891. He served through the war with Spain as chief surgeon in Porto Rico, and there organized and was president of the superior board of health and board of charities. He was chief surgeon of the China relief expedition in August, 1900. Colonel Hoff was a member of the faculty of the Army Medical School in 1901 and 1902, serving during the same period as president of the Association of Military Surgeons of the United States. In 1901 he was commissioned Lieutenant-Colonel, and Deputy Surgeon General, and in 1905, Colonel, and Assistant Surgeon General. In the latter year he was detailed as observer with the Russian Army in the Russo-Japanese War; in 1906 he was chief surgeon of the Department of Missouri, in 1907 and 1908 chief surgeon of the Philippines Division, in 1909 chief surgeon of the Department of the Lakes, and from 1910 until his retirement for age in 1912, chief surgeon of the Department of the East, and Eastern Division. Since his retirement, Colonel Hoff has lived in Washington, and for a considerable time was editor of the *Military Surgeon*.

Edward Chauncey Register, Jr., Lieut.-Col., M. C., U. S. Army; Medical College of Virginia, Richmond, 1908; aged 35; died at Tarnapol, Poland, January 3, from typhus fever. He graduated from the Army Medical School in 1911; was commissioned First Lieutenant, M. C., in the same year, promoted to Captain in 1914; to Major, May 15, 1917; and to Lieutenant-Colonel, June 12, 1918. His military service included a tour of duty in the Philippine Islands and China, and he also was a member of the punitive expedition into Mexico. In July, 1919, he was assigned to duty with the American Expeditionary Forces in France, his special work being the repatriation of German prisoners; he went to Poland in December with the American-Polish Relief Commission organized for the purpose of stamping out typhus fever, and in his letters reported a shocking and tragic condition of affairs in that area, with scarcity of fuel, clothing and food.

Frederick James Russell, Thiells, N. Y.; Tufts College Medical School, Boston, 1897; aged 46; a member of the Medical Society of the State of New York; for eight years a member of the staff of the Massachusetts School for Feeble-Minded, Waverly, then for three years superintendent of the Vermont School for Feeble-Minded, Brandon, an institution which he organized, and for the last year superintendent of Letchworth Village, Thiells; was operated on for brain tumor at the Neurological Institute, New York City, October 21, and died, December 21.

Clarence Jeptha Edwards, Abbeville, La.; University of Louisville, Ky., 1883; aged 61; a member of the Louisiana State Medical Association; for several years president of the board of health of Vermilion Parish; once a member of the state senate; for several years coroner of Vermilion Parish, and at the time of his death president of the school board of the parish; for several years editor and proprietor of the Abbeville *Meridional,* died, January 14, from heart disease.

John Robert Bosley ✠ Lieut.-Col., M. C., U. S. Army (retired), New York City; Johns Hopkins University, Baltimore, 1901; aged 43; a graduate of the Army Medical School in 1904; who entered the Army soon after his graduation and was promoted to Captain, April 23, 1908; to Major, July 1, 1916, and to Lieutenant-Colonel, May 15, 1917, and was retired, Dec. 31, 1917, on account of disability in line of duty; died, January 8, from diabetes.

Ernst Fred Tiedemann ✠ St. Louis; Washington University, St Louis, 1880; aged 58; associate professor of bacteriology in his alma mater; professor of pathology and bacteriology in Beaumont Medical College and Marion-Sims Medical College in 1900 and 1901; pathologist to St. Mary's Infirmary and the Jewish Hospital, and consulting pathologist to the St. Louis Mullanphy Hospital; died, January 15, from an overdose of morphin.

Michael Behrman ✠ Visalia, Ky.; Medical College of Ohio, Cincinnati, 1903; aged 38; a member of the American Academy of Ophthalmology and Oto-Laryngology; formerly secretary of the Covington Board of Health; died in his room in the Palace Hotel, Cincinnati, January 12, from the effects of a gunshot wound of the head, believed to have been self-inflicted while he was despondent on account of illness.

Leon Brayton Harris, Saginaw, Mich.; University of Michigan, Ann Arbor, 1909; aged 33; a member of the Michigan State Medical Society; formerly coroner of Saginaw County; who was commissioned Captain, M. R. C., U. S. Army, and honorably discharged, July 14, 1919; died in the Saginaw General Hospital, January 12, after an operation for appendicitis.

James Rhines ✠ Laurium, Mich.; Michigan College of Medicine and Surgery, Detroit, 1902; aged 42; who was commissioned First Lieut., M .R. C., U. S. Army, and was honorably discharged, Jan. 9, 1919; assistant physician to Mohawk Mining Company, and physician to Ojibwa Mining Company; died in Rochester, Minn., about January 10.

Taylor E. Raines ✠ Concordia, Kan.; Hahnemann Medical College, Chicago, 1891; aged 67; formerly secretary and president of the state board of medical registration and examination, and president of the local board of health; one of the first health officers of Cloud County; died, January 12, from spinal disease.

Henry Josef Kreutzmann, San Francisco; University of Erlangen, Germany, 1880; aged 64; a member of the Medical Society of the State of California; formerly professor of gynecology and obstetrics in the San Francisco Polyclinic; while returning from a hunting trip, January 14, died on the train, from heart disease.

Joshua Restord Weeks, Brooklyn; University of the City of New York, 1877; aged 64; surgeon of the Second Infantry N. C. N. G. in 1877 and 1878; local surgeon of the Houston and Texas Central Railroad from 1892 to 1894; died, January 12, from cerebral hemorrhage.

Milton A. Hengst, Birdsboro, Pa.; Jefferson Medical College, 1878; aged 75; a member of the Medical Society of the State of Pennsylvania, and for ten years president of the board of health of the borough of Birdsboro; died, January 10, from cerebral hemorrhage.

Leonard Charles Mead ✠ Yankton, S. D.; Rush Medical College, 1884; aged 63; for nearly thirty years superintendent of the State Hospital for the Insane, Yankton; a member of the American Medico-Psychological Association; died in that institution, January 10.

Frank Lawrence Cochrane ✠ Brooklyn, N. Y.; College of Physicians and Surgeons in the City of New York, 1900; aged 44; died, January 16, from the effects of a gunshot wound of the brain, self-inflicted, it is believed, while despondent.

Charles L. Wilson, Mansfield, Mo.; Missouri Medical College, St. Louis, 1888; aged 63; for twenty-five years head of the St. John's Hospital Dispensary, St. Louis; died at the home of his sister in Santa Cruz, Calif., January 2, from cerebral hemorrhage.

John Joseph Alderson ✠ Chicago; Northwestern University Medical School, Chicago, 1885; aged 68; once president of the West Side branch of the Chicago Medical Society; vice president of Grace Hospital; died, January 21, from rheumatic endocarditis.

Charles Albert Church ✠ Millbury, Mass.; University of Vermont, Burlington, 1884; aged 60; while driving across the tracks of the New Haven Railroad near Northbridge, Mass., January 13, was struck by a train and almost instantly killed.

George W. Rhoads, Shelbyville, Ill.; Jefferson Medical College, 1866; aged 88; for forty-eight years a druggist of Shelbyville; a veteran of the Civil War; died, January 14.

✠ Indicates "Fellow" of the American Medical Association.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE FRAUD ON THE PUBLIC AND ON THE PROFESSION

SKEEN'S STRICTURE CURE A FRAUD

Postal Authorities Deny the Use of the United States Mails to a Mail-Order Quack

For some years a concern in Cincinnati, which has gone under the names "D. A. Skeen" and "The D. A. Skeen Co." has advertised a mail-order treatment that was "guaranteed"

STRICTURE TREATMENT Guaranteed
If suffering with Stricture, enlarged prostate, difficulty to retain or pass water, you will get immediate, entire and permanent relief by using
SKEEN'S PAINLESS REMEDY
NO CUTTING, DILATING OR DRUGGING
Use treatment 60 days. If not fully satisfied, I will return your money without complaint. No chance for you to lose a penny. My booklet, "AN HONEST TALK," with GUARANTEE, sent free—will open your eyes and convince you. Write
D. A. SKEEN, Dept. 2, P. O. Box 356, Cincinnati, Ohio

Typical advertisement of the Skeen Stricture Cure.

to cure stricture or enlarged prostate. The overworked fraud-order department of the Post Office finally got around to this piece of quackery and has put it out of business by denying to the concern and its manager the use of the United States mails.

In July, 1919, George B. Poole—who was really the D. A. Skeen Co.—was called on by the federal authorities to show cause why a fraud order should not be issued against his business. When the case first came up for hearing, Poole and his attorney, Alfred G. Allen of Cincinnati, offered evidence in an attempt to defend the concern against the Government's charges. Later, Poole and his counsel, in correspondence with the federal officials, intimated that, rather than have a fraud order issued, the business would be discontinued. As a result, the Government offered to withhold further action, providing Poole would execute and file an affidavit to the effect that the business had been discontinued and would not be resumed any time in the future and that the postmaster at Cincinnati would be directed to treat all mail sent to the D. A. Skeen Co. as "refused." After leading the federal authorities to believe that this disposition of the case was desired, Poole refused to submit such an affidavit. As a result, the Government issued a fraud order against Poole and the D. A. Skeen Co.

The extracts that follow are taken from the memorandum of Judge W. H. Lamar, Solicitor for the Post Office to the Postmaster-General recommending the issuance of a fraud order.

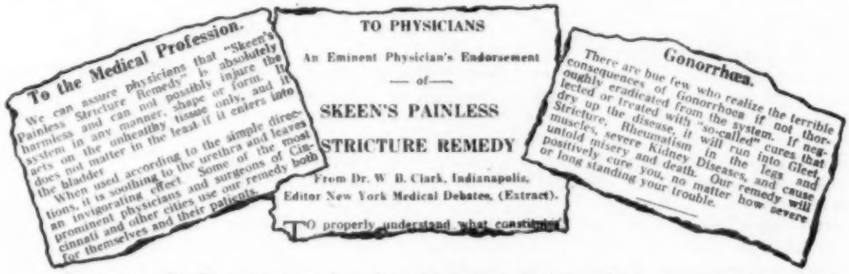
"The scheme in substance is to falsely represent to persons that a certain treatment known as 'Skeen's Painless Remedy,' sold by respondents through the mails for use according to directions, will cure any case of Stricture or Prostate Gland trouble, and all Genito-Urinary diseases and conditions, and other serious troubles which affect persons, regardless of the cause from which the disease or diseased condition arises, their seriousness or the length of their standing; and by means of such representations and promises obtain remittances of money in payment for said treatment. It appears from the evidence that the business done in pursuance of this scheme was started as early as 1885 by one David A. Skeen, who, according to Mr. Poole's testimony, had the treatment made up under a prescription of one of the 'oldest and best known physicians in the South,' although he could not give the name of this physician, nor was there anything in the records of respondent's business to show that they have had such a prescription. Skeen himself was not a physician and knew nothing of the cure or treatment of diseases, or the effect of drugs on the human system, but depended solely on the remedy prepared from this alleged prescription to cure some of the most serious diseases with which persons can be afflicted. Skeen died in 1914. George Poole, the present manager and principal owner of the business, settled his estate, continued the business and incorporated the same under the name The D. A. Skeen Company. George B. Poole, who is the president of this concern, is 65 years of age. He is not a physician and does not employ or consult a physician in connection with the treatment of persons who deal with him through the mails. He did not consult any competent authority to ascertain whether it was safe and legitimate to treat these various diseases and conditions before continuing the business, but in order to induce the public to take this treatment placed advertisements in a large number of papers which have a general circulation through the mails and employed literature of the most misleading character for the purpose of having persons buy the remedy."

The memorandum then quotes a number of typical advertisements used by Poole in obtaining purchasers for the Skeen "treatment." The stuff was analyzed in the Bureau of Chemistry of the Department of Agriculture and the analysis was submitted to the postal authorities in a report of Dr. Lyman F. Kebler, who has done much valuable work in aiding the Post Office in protecting the public against mail-order medical swindles. Dr. Kebler's report showed that the product was essentially a solution of ferric chlorid dissolved in alcohol and water:

Alcohol	45 per cent.
Solution of ferric chlorid	1.7 per cent.
Iron sulphate	.07 per cent.
Flavored with sassafras, etc.	

The memorandum continues:

"The evidence shows that this treatment consisting of one combination of drugs cannot reach and remove the serious diseased conditions which respondent urges can be permanently cured by the use of this remedy. The representations and promises above quoted and others appearing in respondent's advertising literature have been repeatedly shown to be false and fraudulent by the testimony of medical experts skilled in the science of the treatment of diseases and diseased conditions who have frequently been called upon to testify in similar medical mail order cases before the Post Office Department, and such testimony was adduced in this case and is a matter of record herein. This testimony was given by highly experienced and well qualified physicians and is based not only upon their actual experience in the treatment of these diseases, but also upon certain well established physiological, anatomical and therapeutical facts with which they are familiar. The testimony shows that each of the numerous diseases and diseased conditions treated by these respondents with this one remedy may arise from many and varied causes, and in order to successfully treat such diseases and diseased conditions it is necessary first to ascertain the cause or causes thereof, and then


To the Medical Profession.
We can assure physicians that "Skeen's Painless Stricture Remedy" is absolutely harmless and can not possibly injure the system in any manner, shape or form. It does not matter in the least if it enters into the bladder unhealthy tissue only, and it When used according to the simple directions, it is soothing to the urethra and leaves an invigorating effect. Some of the most prominent physicians and surgeons of Cincinnati and other cities use our remedy both for themselves and their patients.
TO PHYSICIANS
An Eminent Physician's Endorsement
— of —
SKEEN'S PAINLESS
STRICTURE REMEDY
From Dr. W. B. Clark, Indianapolis, Editor New York Medical Debates, (Extract).
TO properly understand what constitutes
Gonorrhœa.
There are but few who realize the terrible consequences of Gonorrhœa if not thoroughly eradicated from the system. If neglected or treated with "so-called" cures that dry up the disease, it will run into Gleet Stricture, Rheumatism in the legs and muscles, severe Kidney Diseases, and cause untold misery and death. Our remedy will positively cure you, no matter how severe or long standing your trouble.

Of course, the Skeen concern issued an advertising booklet. Here are miniature reproductions of portions of some of the pages in this booklet. The "Endorsement" of the Skeen "cure" by the "Eminent Physician" of Indiampolis occupied two pages of the booklet. We only have space for the heading.

intelligently apply a suitable treatment which will reach and remove such cause or causes, and in order to effect a cure the superinducing cause must be found and treated, that different causes often require different treatment and that no one treatment can or will cure all cases, and might not cure any."

Judge Lamar then quotes the evidence of the witnesses called by the Government in the case and concludes:

"This and other testimony in the case very clearly indicates the falsity of the representations made by these respondents in order to market their treatment. It leaves no doubt as to the inability of the remedy to relieve and cure the various diseases and diseased conditions for which it is recommended. It shows that these conditions in question may arise from various causes each of which may require for its removal different treatment; that none of the drugs which compose the treatment used, either separately or in combination can, unless by chance, reach and remove the principal cause which produces the condition, and hence cannot effect the promised cure. The return of the postmaster at Cincinnati, Ohio, shows that about the time of the issuance of the citation in this case from 15 to 20 pieces of mail were received daily at that office addressed to The D. A. Skeen Company and delivered.

"I find that this is a scheme for obtaining money through the mails by means of false and fraudulent pretenses, representations and promises, and I therefore recommend that a fraud order be issued against The D. A. Skeen Company, and G. B. Poole, Manager, at Box 356, and 22 Opera Place, Cincinnati, Ohio."

The fraud order was issued December 3, 1919.

Correspondence

"HIGH PROTEIN DIETS AND NEPHRITIS"

To the Editor:—In THE JOURNAL, January 10, p. 107, the following editorial statements appear under the above title:

"We may accept these observations . . . without admitting their wider significance in the etiology of human nephritis. . . . It must be remembered that the diets used by Newburgh were potentially acid in character, and certain to produce an acid urine in a species adjusted and accustomed to secrete an alkaline fluid under a free choice of food. Until such experiments are successfully duplicated under conditions in which the normal reaction of the renal secretion is not tremendously altered and the accessory factors in the diet are known to be adequate, the incrimination of the high protein diets in connection with nephritis must be considered with judicial reserve."

The writer of the editorial refuses to admit that the experiments in question bear on the problem of the cause of human nephritis because the renal injury might, in his opinion, have been produced by the acid character of the diets or by the absence of some essential food factor.

Neither of these objections is justified by the facts. Even though the writer of the editorial states that the diets were certain to produce an acid urine, the data show that such was not the case. A careful review of my notes discloses the fact that, without exception, the urines of the rabbits eating both the casein mixture and the soy bean diet were alkaline to litmus.

The second objection offered implies that the nephritis might be an expression of a deficiency disease. Here, again, a "judicial consideration" of the data will show that such a view is untenable. In the case of the casein experiments it will be noted that two groups of animals were used. Each group was fed a diet made up of a mixture of milk, water and carrot, to which casein was added. The first group of rabbits received 15 gm. of casein daily in this way; the second group, 30 gm. The first group failed to develop nephritis. How, then, can the nephritis which was found in the second group be attributed to a lack of something in the diet, when the latter group received everything which the first group did, and in addition, fifteen more grams of casein daily?

When we come to the soy bean experiments we also find sufficient evidence to prove that the nephritis was not caused by the absence of something in the food. The investigators who have made a special study of the vitamin content of foods have compared the growth curve of animals eating foods whose vitamin content was to be tested, with the normal growth curve. On the basis of such studies, a food which permits normal growth is accepted as one whose vitamin content is adequate. In the soy bean experiments, two groups of young animals were used. One group was used as a control; the other group was fed the beans. All other conditions were identical for the two groups. The controls, after living on the stock laboratory diet for seven months, had an average individual weight of 2,415 gm. Their kidneys were normal. The group of young animals eating soy beans averaged 2,179 gm. at the beginning of the experiment. Three months later, their average individual weight was 2,497 gm. Still another group of rabbits eating soy beans weighed 2,382 gm. at the beginning of the experiment and 2,780 gm. three months later. The animals living on soy beans gained weight at more than the normal rate in both instances. Evidently, then, the nephritis produced by the soy beans cannot be attributed to a lack of something in the diet.

L. H. NEWBURGH, M.D., Ann Arbor, Mich.

"THE ACUTE ABDOMEN"

To the Editor:—Anent the controversy of your correspondents (Dr. M. W. Lyon, Jr., THE JOURNAL, Dec. 20, 1919, p. 1897, and Dr. Ramsay Spillman's rejoinder, Jan. 3, 1920, p. 47) will you please allot me some of the valuable space of THE JOURNAL to shed additional light on the moot point, "acute abdomen."

I want to call attention to the fact that William Henry Battle, senior surgeon to St. Thomas Hospital, London, whose name is identified with the incision so extensively employed in operations for appendicitis, delivered an oration before the Medical Society of London, ten years ago, entitled "The Acute Abdomen." Under this very caption, "The Acute Abdomen," the first edition of his monograph, 250 pages, appeared, dedicated to students and surgical dressers, which, having been exhausted in 1914, went into a second edition.

Perusal of this book, "The Acute Abdomen," which bids fair to become a classic, might answer the hypercritical Dr. Lyon, and perhaps explain to Dr. Spillman the *fons et origo* of the purity of the terminology, "The Acute Abdomen," which he credits to Dr. Gibson.

Comment of the editor has it that "scientific medicine demands scientific phraseology." Be that as it may, there is also an art of medicine to be considered; and to give expression thereto, it is meet to draw such metaphor as "the acute abdomen," which visualizes a clinical picture, the syndrome of which is common to a host of acute ailments peculiar to the abdomen. As for terminology — the essence alike of science and art — both are daily enriched by new coined words. Thereafter, common usage is authority for their sanction and thereby establishes its precedence over pedantry. Why muse with Homer or risk being judged hypercritical, when browsing amid the bookshelves of a modern library would have led "to pastures new"—"The Acute Abdomen" of ten years' growth.

MARTIN W. WARE, M.D., New York.

"STANDARDIZATION OF LABORATORY TESTS"

To the Editor:—Reference to the standardization of the Wassermann test was made in two recent numbers of THE JOURNAL (Dec. 6, 1919, p. 1773, and Dec. 20, 1919, p. 1897). In neither of these was mention made of research work which is now being conducted at the University of Pennsylvania and the Polyclinic in Philadelphia under the direction of John A Kolmer, and which represents, no doubt, the best attempt which has as yet been made to standardize this important test. The results of this work will, I am informed, appear in a series of about twenty papers in the

American Journal of Syphilis. The first two articles of this series were published in the January, 1919, number of that journal. To date, six papers have appeared. It is expected that the balance will appear during the course of this year. All laboratory workers who make the Wassermann test will be greatly interested in the results obtained by the Philadelphia investigators.

HENRY ALBERT, M.D., Iowa City.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

"PNEUMO-STREP-SERUM"

To the Editor:—Mulford & Co. are advertising a serum called pneumo-strep-serum, one of their advertisements appearing in the *Journal of the American Public Health Association* for January, 1920. Is there really anything in the claims which they put forth in this advertisement which should lead men to use a combined serum of this kind? A hasty reading of this advertisement by medical men would induce them to believe that this serum was the very mithridate of pneumonia.

Your opinion of the subject will be thankfully received.

GEORGE W. GOLER, M.D.,
Health Officer, Rochester, N. Y.

ANSWER.—This advertisement is in the form of an announcement, with large head lines "Announcing the Production of Pneumo-Strep-Serum." It informs the physician that reports from army camps indicate that various streptococci are frequently associated with pneumococci as causative factors in pneumonia. The advertisement features a picture showing the method of injecting cultures into a serum-producing horse. It suggests to the physician that "when it is determined that the pneumonia is complicated by the streptococcus, the conjoint use of Antipneumococcic Serum Polyvalent and Antistreptococcic Serum Polyvalent is indicated." The advertisement then goes on to say that "the difficulties and inconvenience of separate injections" may be avoided by the use of this new preparation, which is prepared "by injecting horses simultaneously with the fixed types I, II and III of pneumococcus, also some strains from group IV pneumococcus, and 15 key strains of streptococcus." This serum, the manufacturer says, "therefore possesses the combined advantages of antipneumococcic and antistreptococcic serums." It is also claimed that "it contains antibodies against all the various strains of pneumococcus and streptococcus employed." Finally, it is stated that "by standardization against type I pneumococcus, it is equally as potent against type I pneumonia as the type I and polyvalent antipneumococcic serums."

The advertisement by going beyond our present knowledge carries misleading inferences, a few of which may be mentioned. It takes for granted that the therapeutic value of antipneumococcus and antistreptococcus serums is settled. The fact is that the different varieties of such serums are still in the experimental stage. The serum against pneumococcus type I has received perhaps the most favorable comments, but available evidence based on the experience in the army camps during the war does not leave a very large margin on which to predicate any claims for effective specific action even by this serum. Of the other serums of the class mentioned in the advertisement not one warrants the inferential claim of specific value. Again, the advertisement conveys the impression that pneumonia generally is a mixed infection, but that is not the case, especially when it concerns the classical lobar pneumonia caused by some variety of the pneumococcus, and, after all, that is the kind that the physician is called on most frequently to treat. The advertisement assumes a power of antibody-production by the horse that has not been demonstrated. Fundamental facts in immunology indicate that a horse injected with so great a variety of antigens is not able freely to produce all the corresponding antibodies. Even if the serum of horses injected with a single variety of pneumococcus or streptococcus can acquire specific therapeutic value in human infections with that organism—which has not been demonstrated conclusively—there nevertheless would be little chance that a horse injected simultaneously with the fixed types one, two and three of pneumococcus, also some strains from group four pneumococcus and "15 key strains" (whatever that may mean) of streptococci could yield a serum of such manifold specific virtues as inferred by the advertisement.

The basic question involved in the inquiry is whether or not the medical profession should take its therapeutics from the manufacturers of therapeutic products. The medical profession has, for its own protection and information, created a body that is competent to determine the probable scientific value of therapeutic agents. That body is the Council on Pharmacy and Chemistry. Had the "Pneumo-Strep-Serum" of Mulford's the virtues with which the advertisement inferentially endows it, this product would have been accepted by the Council on Pharmacy and Chemistry for inclusion in New and Nonofficial Remedies. It has not been so accepted although many other biologic products of the same manufacturer have been. It is to be regretted that such journals as the *American Journal of Public Health, Military Surgeon, Southern Medical Journal, Journal of Laboratory and Clinical Medicine*—among many others—should permit the use of their pages for such purposes when they could easily protect themselves and their readers by securing accurate information concerning such products from the Council on Pharmacy and Chemistry. If there is one field in which reliable information and unprejudiced scientific opinion should prevail it is in the therapeutics of biologic products. At the present time, too many manufacturers are advertising these products without any regard for scientific fact or rationality, and too many physicians accept therapeutic instruction concerning these products from those commercially interested.

Miscellany

THE PHYSICIAN AND THE PROHIBITION LAW

Internal Revenue Regulations 60, regulating the manufacture, sale, transportation, importation, exportation, delivery, purchase, possession and use of intoxicating liquor under the national prohibition act providing for the enforcement of the eighteenth amendment of the constitution, have just been issued by the commissioner of internal revenue.

Previous regulations provided for the enforcement of the war time prohibition law.[1]

LIQUOR DEFINED

Liquor is defined to include alcohol, whisky, brandy, rum, gin, beer, ale, porter and wine, and, in addition, any spirituous, vinous, malt or fermented liquors, whether medicated, proprietary, patented or by whatever name called, containing one-half of one per cent. or more of alcohol by volume, which are fit for use for beverage purposes. This definition includes homeopathic potencies, attenuations and dilutions. It does not include denatured alcohol or denatured rum or medicinal and other alcoholic preparations unfit for use as beverages.

PHYSICIAN DEFINED

The word "physician" is defined as meaning any person duly licensed to practice medicine and actively engaged in the practice of medicine in the state in which licensed. It does not include osteopaths and chiropractors. Pharmacists are any persons licensed under the laws of any state to compound and dispense medicines prescribed by a duly licensed physician and who are actively engaged in the practice of such profession.

CONDITIONS UNDER WHICH LIQUORS MAY BE USED

Under the conditions provided, intoxicating liquors may be made, transported, sold and used in the manufacture of medicinal preparations in accordance with the formulas prescribed by the U. S. Pharmacopeia, National Formulary,

1. THE JOURNAL A. M. A., Jan. 19, 1918, p. 186; Feb. 9, 1918, p. 410; March 2, 1918, p. 645; July 5, 1919, p. 121; Oct. 4, 1919, p. 1080; Oct. 25, 1919, p. 1304; Nov. 15, 1919, p. 1544.

or the American Institute of Homeopathy, which are unfit for use for beverage purposes:

1. In the manufacture of patented, proprietary and other medicines which are unfit for use for beverage purposes.
2. By retail druggists and pharmacists in the compounding of medicinal preparations unfit for use for beverage purposes, and for dispensing on physicians' prescriptions.
3. By physicians in the practice of their profession.
4. By hospitals and sanatoriums for medicinal and scientific purposes.
5. In manufacturing industrial establishments for first aid treatment.

Alcohol may be used for medication by druggists or pharmacists for laboratory purposes, by dentists and veterinarians in the course of their practice, and by any college, university or institution of learning in any laboratory for scientific research, and in any hospital or sanatorium.

Alcoholic medicinal preparations fit for use as beverages may be used by retail druggists in compounding prescriptions of physicians, by hospitals and sanatoriums for medicinal purposes, and by physicians in the practice of their profession.

WHO MAY SECURE PERMITS

All persons desiring to manufacture, sell, furnish, prescribe, purchase, possess or use intoxicating liquor must procure permits. Persons procuring liquor for medicinal purposes on prescription of physicians holding permits to prescribe are not required to have a permit themselves. Permits to prescribe intoxicating liquor do not confer authority other than to prescribe, that is, a physician holding a permit to prescribe liquor for his patients in his practice is not authorized thereby to manufacture or sell intoxicating liquors.

APPLICATIONS FOR PERMITS

Applications for permits must be made on Form 1404, in triplicate. All three copies must be signed by the applicant, the original being sworn to before a notary public. All three copies must then be forwarded to the federal prohibition director in charge of the administration of the law in the state. The director may issue a permit, such permit being in triplicate, and having the same serial number as the application. One copy of the permit and the application are returned to the applicant.

Full names must be signed to each application. The permit when granted must be conveniently and permanently filed so that it is readily accessible at any time. Any person holding a permit, who moves his place of business (as a physician changing his location) may surrender his copy of application and permit to the director and have a new one issued with the change of location.

Permits issued prior to Jan. 17, 1920, must be renewed as the commissioner may direct, but holders of such permits may continue to operate under them until their new applications are acted on.

Permits issued prior to August 31 of any year will expire on December 31 of that year.

BONDS

Bonds in duplicate must be filed with the application, except that unless otherwise required by the commissioner, no bonds need be filed by physicians, dentists or veterinarians asking for permits to use intoxicating liquor in the course of their practice, or hospitals and sanatoriums.

DELIVERY OF LIQUOR

Whisky and brandy, bottled in bond, for medicinal purposes may be delivered on receipt of permits on form 1410 to hospitals or sanatoriums or to physicians holding permits to purchase liquors for medicinal purposes, or to wholesale or retail druggists or pharmacists.

PERMITS TO PURCHASE

Any person entitled to procure intoxicating liquor must submit an application to purchase on Form 1410. This application, when approved by the director, becomes a permit. The applicant must describe the intoxicating liquor in detail, and must give the quantity in gallons of each kind of intoxicating liquor on hand at the time of the application and the quantity in gallons previously received by him during the current calendar year. The application must also show the name and address of the vender, the purpose for which the liquor is to be used, the serial number of the permit held by the applicant, and the address covered thereby. All applications must be sworn to and must be made in triplicate. If transportation is required, one or two additional copies must be made. All copies are forwarded to the director for approval. All permits to purchase expire in ninety days after the date of approval.

HOMEOPATHIC AND ECLECTIC PHYSICIANS

Physicians of the homeopathic and eclectic schools, after obtaining a permit to use alcohol or homeopathic potencies, attenuations and dilutions in the course of their practice, may procure such preparations from homeopathic pharmacists. One month prior to the current quarter of the calendar year, each homeopathic or eclectic physician may file an application on Form 1410 in triplicate, for the total quantity of alcohol or homeopathic potencies, attenuations and dilutions which he desires to purchase during the following quarter. This application, when approved, becomes a blanket permit to purchase goods for ninety days. It must state the name of the homeopathic pharmacist from whom the physician desires to purchase these preparations. No physician may receive in excess of 15 gallons of alcohol or alcoholic preparations during any one year.

U. S. P. AND N. F. PREPARATIONS

Distilled spirits and wines may be used in the manufacture of medicinal preparations in accordance with U. S. Pharmacopeia and National Formulary or the American Institute of Homeopathy, provided they are unfit for beverage purposes. They must contain no more alcohol than is necessary, and must contain in each fluidounce a dose of recognized therapeutic value.

Preparations included in the U. S. Pharmacopeia and National Formulary which are fit for beverage purposes will be regarded as intoxicating liquor and subject to the same restrictions.

DENATURED ALCOHOL

Alcohol may be denatured by any one of the following seven formulas:

1. Mercuric chlorid, 1:2 000; mercuric chlorid, 0.8 gm.
2. Hydrochloric acid, 60 c.c.; alcohol, 64 c.c.; water, 300 c.c.
3. Mercuric chlorid, 1½ grains; hydrochloric acid, 2 drams; alcohol, 4 ounces.
4. Formaldehyd, 2 parts; glycerin, 2 parts; alcohol, 96 parts.
5. Phenol (carbolic acid), 1 dram; tannic acid, 1 dram; alcohol, 1 pint; water, 1 pint.
6. Alum, ½ ounce; formaldehyd, 2 drams; camphor, 1 ounce; alcohol and water, 1 pint.
7. Liquor cresolis compositus (U. S. P.) 10 c.c.; alcohol, 1,000 c.c.

SALE OF DENATURED ALCOHOL

Retail druggists may sell alcohol medicated as above in quantities not to exceed one pint for other than internal use, without physicians' prescriptions, to persons not holding permits, provided that in each case the container bears a poison label. Alcoholic medicinal preparations, not for use for beverage purposes, may be sold by retail druggists on physician's prescription, provided the name of the druggist appears on the prescription in the physician's handwriting. Prescriptions may not be issued for more than one pint of such liquors at any one time. Refilling of such prescriptions is forbidden. Pharmacists may refuse to fill such prescriptions if they have reason to believe that physicians are prescribing for other than medicinal purposes or that a patient is securing, through one or more physicians, quantities of intoxicating liquor in excess of the amount necessary for medicinal purposes, which shall not be more than one pint to the same person in ten days. Physicians may not prescribe liquor for their own personal use.

PRESCRIPTIONS FOR LIQUOR

Pharmacists filling prescriptions for intoxicating liquor must, at the time of filling, endorse on each prescription, over their signature, the word "cancelled," together with the date on which the liquor is delivered. Such prescriptions must be kept in a separate file. Once a month each druggist must send to the director a list of prescriptions filled by

them, showing the names of the physicians, the names of the patients, and the total of liquor dispensed to each patient during the month. Retail druggists selling intoxicating liquors, whether on a physician's prescription or otherwise, must pay special tax as liquor dealers and must keep such tax stamp conspicuously posted.

ADMINISTRATION OF LIQUOR BY PHYSICIANS

Distilled spirits, wines and alcoholic medicinal preparations fit for use for beverage purposes may be administered by physicians to their patients for medicinal purposes, when such liquor is necessary to afford relief for some known ailment, and when delay in procuring the liquor through a retail pharmacist on prescription might result in loss of life, aggravation of the ailment, or intense suffering. Physicians may obtain no more than six quarts of liquor during any calendar year to be administered to their patients only in quantities necessary to afford relief at the time of administration. They may not sell or furnish such liquors to any persons. The total amount of liquor administered to any one patient by one or more physicians may not exceed one pint in ten days.

HOSPITALS AND SANATORIUMS

Persons conducting bona fide hospitals or sanatoriums, engaging in the treatment of persons suffering from recognized disease or ailments (except treatment of alcoholism), may administer liquors to patients in necessary quantities on prescription of the hospital or sanatorium physician. Such physician shall issue a separate prescription for each patient, but a separate prescription for each dose is not necessary unless prescribed at irregular intervals. All such prescriptions must be in duplicate, both copies signed by the physician, and must show the name of the hospital or sanatorium, the date of issue, the name of the patient, the kind of liquor prescribed, the directions for use, and the amount to be administered during any given period.

ALCOHOL FOR EXTERNAL USE

Tax paid alcohol procured by hospitals or sanatoriums may be issued to attendants for rubbing purposes on prescriptions issued by the hospital physician. Denatured alcohol may be issued to attendants in quantities not exceeding one pint, without a prescription.

HOSPITAL REPORTS

Hospitals or sanatoriums must report at the end of each month to the director, sending one copy of each prescription, and must keep the other copy filed chronologically at the hospital. Hospitals or sanatoriums are forbidden to sell or furnish liquors or alcohol to other persons.

INSTITUTIONS FOR ALCOHOLICS

Bona fide hospitals or sanatoriums engaged in the treatment of alcoholism may obtain liquors and alcoholic medicinal preparations for use in the treatment of chronic alcoholism, but only when the tapering off method is used, or when the dosage is steadily reduced until the patient, within a reasonable time, such as four weeks, has lost the craving for alcoholic stimulants. Such liquor may be administered to patients only in necessary quantities and only under the direction of a duly qualified physician employed by the hospital. Such institutions must keep three records, the first containing the name and residence of the patient, age, date of entry and departure from the institution, and the condition for which he is treated. A serial number will be given to each patient when admitted. The second record will show the serial number of the patient, condition for which treated and the amount of liquor furnished him during the period treated. A copy of this record will be forwarded to the director each month, the serial number being used in place of the name of the patient. The third will show the quantity and kind of liquor on hand the first of each month, the quantity received during the month, the quantity dispensed to patients, the quantity used in compounding legitimate medicinal preparations, and the quantity on hand at the end of the month. A transcript of this record will be sent to the director each month.

USE OF LIQUORS IN EMERGENCIES

Intoxicating liquors may be administered in case of accident, shock or other emergency, only by a physician, nurse or other person in charge of first aid stations in manufacturing, industrial and other establishments. Such establishments must keep a record in duplicate, and must transmit a copy each month, showing the amount on hand, the amount received and the amount dispensed, with the date and the name of each person to whom dispensed and the amount on hand at the end of the month.

DENTISTS

Dentists may use alcohol for professional purposes in quantities not to exceed six quarts a year. Applications for permits to use alcohol for such purposes must state the purposes for which it is intended.

LABORATORIES

Alcohol may be used for legitimate laboratory purposes, such as chemical, biologic, bacteriologic and clinical, provided its use is nonbeverage, and that it is of such a nature as effectually to preclude diversion of the alcohol for unauthorized purposes. Applications for permits from laboratories will be treated separately on their merits on account of the varied nature and multiplicity of such laboratories.

PRESCRIBING OF LIQUOR BY PHYSICIANS

Physicians who have filed applications on Form 1404 and who obtain permits to prescribe intoxicating liquor may prescribe such liquors for persons on whom they are in attendance, if, after careful physical examination, or in cases in which such examination is impracticable on the best information obtainable, the physician believes that the internal or external use of such liquor as a medicine is necessary, and will afford relief from some known ailment.

No prescription may be for more than is necessary for the person for whom it is prescribed, and in no case shall it exceed one pint in ten days for the same person by one or more physicians.

Physicians are not permitted to write prescriptions for liquor for their own use, or to use any liquor procured on prescriptions written by them. Prescriptions may be filled only by a pharmacist and may not be refilled.

PRESCRIPTION BLANKS

All prescriptions must be made on Form 1403, and must contain all the data called for. If the physician does not possess any such forms, and delay may result in loss of life or intense suffering, he may prescribe without the use of Form 1403, but his prescription must contain all the information called for. Blank prescriptions on Form 1403, issued by the commissioner in book form, serially numbered, may be procured without cost by any physician holding a permit. Not more than one book shall be issued to a physician at a time.

Prescription blanks are printed with stubs attached, the stub being a duplicate. All prescriptions must be in duplicate, both copies signed by the physician. After the last blank has been used, the book containing the duplicates must be returned to the director. Any unused, mutilated or defaced blanks must be returned with the book.

In case of prescriptions written on other forms in an emergency, duplicate copies must be returned to the director at the end of the month. Prescription blanks must be used in the order of the serial numbers printed thereon.

PHYSICIANS' RECORDS

Physicians prescribing intoxicating liquors must keep on Form 1402 an alphabetical record showing every such prescription issued by him, giving the date, the amount and kind of liquor prescribed, the name of the patient, the ailment for which prescribed, the directions, and the amount and frequency of the doses.

LIABILITY

No special liability is incurred by physicians, hospitals or sanatoriums for special tax for administering intoxicating liquors in cases of emergency.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, Mar. 2. Sec., Dr. L. O. Sloan, Juneau.

CALIFORNIA: Los Angeles, Feb. 16-19. Sec., Dr. Chas. B. Pinkham, 906 Forum Bldg., Sacramento.

CONNECTICUT: New Haven and Hartford, March 9-10. Sec., Reg. Bd., Dr. Robert L. Rowley, Hartford. Sec., Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven. Sec., Eclectic Bd., Dr. James Edwin Hair, 730 State St., Bridgeport.

ILLINOIS: Chicago, Mar. 1-3. Director, Mr. Francis W. Shepardson, Springfield.

INDIANA: Indianapolis, Feb. 10-13. Sec., Dr. W. I. Gott, 84 State House, Indianapolis.

KANSAS: Topeka, Feb. 10. Sec., Dr. H. A. Dykes, Lebanon.

MAINE: Portland, March 9-10 Sec., Dr. Frank W. Searle, 140 Pine St., Portland.

MASSACHUSETTS: Boston, March 9-11. Sec., Dr. Walter P. Bowers, Room 144, State House, Boston.

NATIONAL BOARD OF MEDICAL EXAMINERS: St. Louis and Chicago, Feb. 18-25. Sec., Dr. J. S. Rodman, 1310 Medical Arts Bldg., Philadelphia, Pa.

NEW HAMPSHIRE: Concord, March 11-12. Sec., Dr. Charles Duncan, Concord.

VERMONT: Burlington, Feb. 10-12. Sec., Dr. W. Scott Nay, Underhill.

WYOMING: Thermopolis, Feb. 2-4. Sec., Dr. J. D. Shingle, Cheyenne.

THE HOUSE OF CALVARY HOSPITAL

ROBERT J. REILEY
Architect
NEW YORK

The House of Calvary Hospital is devoted to the care and treatment of men and women suffering from cancer and is in charge of Catholic sisters of the Dominican order. The hospital was located for many years in Perry Street, New York; but when this property was taken by the city in connection with the opening of a new street, it was decided to move to a less congested portion of the city and to erect a building to accommodate about eighty patients. The new site was selected with regard to the importance of having light and air on every side and at the same time of being readily accessible from the center of the city by the existing lines of transportation.

The management desired to maintain as far as possible the atmosphere of the home about the hospital, and this

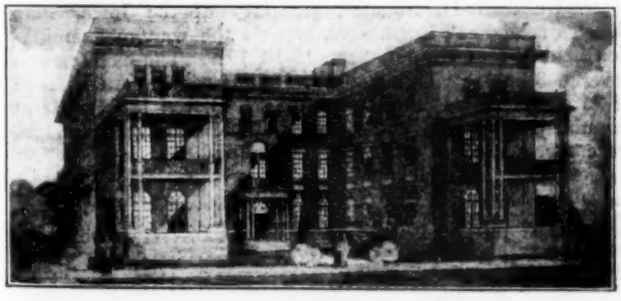


Fig. 1.—House of Calvary Hospital.

influenced the architect to select the colonial style of architecture, as it is probably more typical of our American home life than any other. The building is laid out on what is known as the pavilion plan, that is to say, the main wards are located in wings connected with a central building. In this case the pavilions are placed at right angles to the central building so that they may run approximately north and south, in order to obtain both morning and afternoon sun in all of the main wards. At the south end of each pavilion is a solarium for the patients occupying that ward, and at the north end an open balcony for use according to weather conditions.

Figure 2 shows the arrangement of rooms and wards on the main floor. The second floor is similar in general arrangement and is devoted to women patients. The third floor contains in the easterly end of the building the roentgen-ray room and the surgical department, comprising a seven bed ward, and sterilizing, wash up, etherizing, operating and recovery rooms. The westerly wing is devoted to the sisters' apartments, and in the central part of the building are a few private rooms for women patients. Owing to the

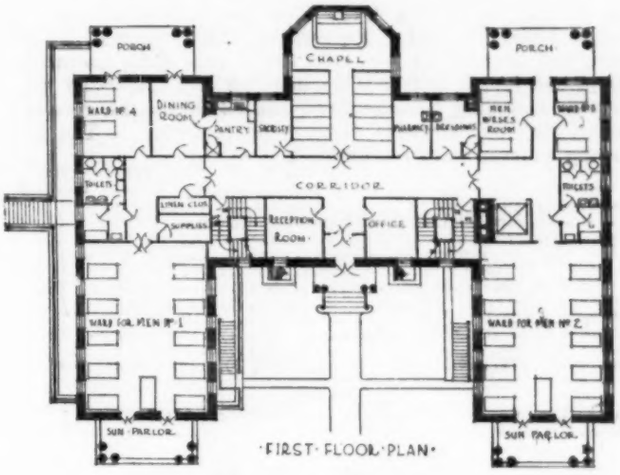


Fig. 2.—First floor plan.

special character of the work of this hospital, a room for changing dressings is placed on each floor and a small gas incinerator is part of its equipment.

The building is constructed of fireproof materials throughout; the columns, floor beams and girders are of steel, the floor construction of concrete, and the partitions of terra cotta blocks. Not only is the building itself fireproof, but an effort has been made to eliminate the danger from a fire in the contents of the building. This danger is that of smoke, and more particularly the panic caused by the smell of smoke. With this in mind, each floor of the building has been subdivided, and the passage of smoke from one floor to another has been prevented by enclosing the stairs and elevator shafts. On once entering the stair enclosure on any floor one may proceed downstairs and out of the building without reentering any of the corridors, thus insuring a smoke free exit.

One of the problems encountered in hospital construction has been the difficulty of obtaining a satisfactory material for use on the floor. In this case, in the wards and corridors it was decided to use linoleum cemented to the concrete underflooring with an interlining of felt. This material has many points to commend it, as it is sanitary, noiseless, and comfortable; but it is necessary to have the concrete thoroughly dried out before it is laid and to equip the beds and other heavy furniture with large feet or casters. Tile floors are used in the operating, sterilizing and etherizing rooms and in the toilet rooms; wood floors in the reception room, office and nurses' rooms, and cement floors, treated to prevent powdering or dusting, in the service portions of the hospital.

The building is heated by hot water; but an auxiliary steam heating system was installed so as to provide a means of rapidly heating the operating room, especially in the spring and fall when the general heating plant might not be in operation. This system also supplies steam for the laundry and sterilizing rooms. While natural ventilation is made use of as far as possible, artificial ventilation has also been installed. The building is cleaned by means of a stationary

vacuum cleaning plant placed in the basement but controlled from every floor. An electric push button is located beside each bed to light the nurses' signal, the elevator and dumb waiters are electrically controlled, and in general all practical labor saving devices have been adopted.

477 Fifth Avenue.

Texas June Examination

Dr. M. F. Bettencourt, secretary of the Texas State Board of Medical Examiners, reports the written examination held at Austin, June 24-26, 1919. The examination covered 12 subjects and included 120 questions. An average of 75 per cent. was required to pass. Of the 82 candidates examined, 80 passed and 2 failed. One hundred and thirty-one candidates, including 1 nongraduate and 32 osteopaths, received physicians' and surgeons' licenses by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	No. Licensed
Georgetown University		(1909)	1
Hahnemann Medical College and Hospital, Chicago		(1919)	1
Tulane University		(1916, 1), (1919, 4)	5
Johns Hopkins University		(1914)	1
St. Louis University		(1919)	1
Washington University		(1918)	1
Columbia University		(1918)	1
Jefferson Medical College		(1919)	1
Meharry Medical College		(1919)	1
Baylor University		(1919)	18
University of Texas		(1918, 1), (1919, 48)	49
	FAILED		
Kansas City College of Medicine and Surgery		*(1919)	1
Baylor University		(1919)	1

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Alabama		(1914)	Alabama
Arkansas Industrial University		(1897)	Arkansas
College of Phys. and Surgs., Little Rock		(1911)	Oklahoma
College of Physicians and Surgeons, Los Angeles		(1915)	California
Denver and Gross College of Medicine		(1905)	Colorado
Denver College of Medicine		(1899)	California
George Washington University		(1906)	Utah
Howard University		(1916)	Missouri
Atlanta College of Physicians and Surgeons		(1913)	Georgia
Atlanta Medical College		(1915)	Georgia
University of Georgia		(1910), (1912)	Georgia
Bennett Medical College		(1911), (1915)	Illinois
College of Phys. and Surgs., Chicago		(1909), (1910), (1912)	Illinois
Northwestern University		(1904) Illinois, (1917)	Mass.
Rush Medical College		(1914), (1918)	Illinois
University of Illinois		(1912), (1916)	Illinois
Medical College of Indiana		(1897)	W. Virginia
Drake University		(1913)	Iowa
College of Phys. and Surgs., Kansas City, Kan.		(1900)	Kansas
Hospital Coll. of Med., Louisville		(1901), (1902), (1905)	Kentucky
Kentucky School of Medicine		(1906)	W. Virginia
Kentucky University		(1904)	Nebraska
Louisville Medical College		(1891)	Oklahoma
University of Louisville		(1911)	Tennessee
Tulane University (1893), (1905), (1918) Mississippi, (1916), (1918) Louisiana.			
Baltimore University		(1902)	Nevada
Maryland Medical College		(1911)	Maryland
Harvard University		(1918), (1919, 2)	Mass.
Detroit College of Medicine		(1904)	Michigan
Saginaw Valley Medical College		(1903)	Michigan
American Medical College		(1907)	Missouri
Columbian Medical College		(1899)	Kansas
Kansas City Coll. of Med. and Surg. (1917), (1918), (1919, 2) Arkansas.			
National University of Arts and Sciences		(1913)	Missouri
Northwestern Medical College		(1893)	Kansas
St. Louis University		(1913)	Illinois
St. Louis Coll. of Phys. & Surgs. (1904) Missouri, (1917)			Oklahoma
University Medical College of Kansas City		(1909)	Kansas
Washington University		(1905) Kansas, (1914), (1917)	Missouri
Lincoln Medical College		(1901)	Nebraska
Dartmouth Medical School		(1901)	New Hamp.
Coll. of Phys. & Surgs. of the City of New York		(1883)	Dist. Colum.
University and Bellevue Hosp. Med. Coll.		(1899)	New Mexico
University of the City of New York		(1886)	Wisconsin
Eclectic Medical Institute		(1884) Illinois, (1898)	Missouri
University of Oklahoma		(1913), (1915)	Oklahoma
Jefferson Medical College		(1900) Indiana, (1903)	Arkansas
Chattanooga Medical College		(1904) Georgia, (1906)	Oklahoma
Meharry Medical College		(1906) Arkansas, (1915)	Tennessee
Memphis Hospital Medical College (1906), (1908), Oklahoma, (1903), (1909), (1913) Arkansas.			
University of Nashville		(1905)	Arkansas
University of Tennessee		(1905) New Mexico, (1918)	Tennessee
Vanderbilt University (1914, 2), (1916, 2), (1917, 2) Tennessee, (1916) Oklahoma.			
College of Physicians and Surgeons, Dallas		(1905)	Oklahoma
Southern Methodist University		(1915)	Oklahoma
University of Texas		(1916) Missouri,	Mississippi
University of Vermont		(1899)	Vermont
University College of Medicine, Richmond		(1899)	Virginia
University of Virginia		(1915)	Arkansas
McGill University		(1907)	Maine

* Graduation not verified.

Illinois June Examination

Mr. F. C. Dodds, superintendent of registration, Illinois Department of Registration and Education, reports the written and practical examination held at Chicago, June 16-20, 1919. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 226 candidates examined, 201 passed and 25 failed. Twenty-six candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	No. Licensed
University of Colorado		(1913)	1
Chicago College of Medicine and Surgery		(1916), (1917, 3)	4
Chicago Hospital College of Medicine		(1918)	11
Chicago Medical College		(1886)	1
Hahnemann Med. Coll. and Hosp. Chicago		(1916), (1919, 9)	10
Loyola University		(1916, 3), (1918, 3), (1919, 40)	46
Northwestern University		(1914), (1918), (1919, 80)	82*
Rush Medical College		(1919)	26†
University of Illinois		(1918), (1919, 8)	9
Harvard University		(1919)	1
St. Louis University		(1918, 2), (1919, 4)	6
University of Nebraska		(1919)	1
Dartmouth Medical School		(1900)	1
Meharry Medical College		(1918)	1
University of Utrecht		(1913)	1
	FAILED		
Bennett Medical College		(1910, 2), (1914)	3
Chicago College of Medicine and Surgery		(1916), (1917)	2
Chicago Hospital College of Medicine		(1915, 2), (1918, 3)	5
Illinois Medical College		(1910)	1
Jenner Medical College		(1916, 2), (1917)	3
Loyola University		(1918)	1
Northwestern University		(1919)	1
Leonard Medical School		(1907)	1
Meharry Medical College		(1902), (1913), (1915, 2), (1916, 2), (1917), (1918)	8

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Hahnemann Med. Coll. and Hosp., Chicago		(1901)	Iowa
University of Illinois		(1913), (1915)	Wisconsin
University of Louisville		(1910), (1916, 2)	Kentucky
Johns Hopkins University		(1904) Wisconsin, (1911)	Maryland
		(1915)	New York
University of Maryland		(1904) Missouri, (1912)	Maryand
Harvard University		(1911)	Vermont
Detroit College of Medicine and Surgery		(1917)	Michigan
National University of Arts and Sciences		(1918)	Missouri
St. Louis University		(1916), (1918)	Missouri
Washington University		(1906), (1917)	Missouri
University of Nebraska		(1908)	Nebraska
New York Homeopathic Med. Coll. and Flower Hosp.		(1910)	N. Dakota
Western Reserve University		(1914)	Ohio
Meharry Medical College		(1916)	Missouri
Marquette University		(1914), (1916)	Wisconsin
University of Heidelberg		(1915)	Maryland
National University, Athens		(1904)	Indiana

* Sixty-five of these candidates received limited licenses, pending completion of their hospital internship.

† Twenty-five of these candidates received limited licenses, pending completion of their hospital internship.

Iowa September Examination

Dr. Guilford H. Sumner, secretary of the Iowa State Board of Medical Examiners, reports the written examination held at Des Moines, Sept. 16-18, 1919. The examination covered 8 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 12 candidates examined, 11 passed and 1 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Loyola University		(1919)	88.7
Rush Medical College		(1919)	93.1
University of Illinois		(1918)	90.7, 91.5
Tufts College Medical School		(1910)	80.1
Barnes Medical College		(1901)	76.8
St. Louis University		(1919)	90.5
University of Nebraska*		(1919)	89.5
Eclectic Medical College of the City of New York		(1906)	90
University of Pennsylvania		(1919)	88.1, 93.2
	FAILED		
Loyola University		(1918)	69.7

* Finished work of medical curriculum, November, 1919; will receive M.D. degree in February, 1920.

Iowa Reciprocity Report

Dr. Guilford H. Sumner, secretary of the Iowa State Board of Medical Examiners, reports that 31 candidates were licensed by reciprocity at the meeting held Nov. 18, 1919. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Birmingham Medical College		(1909)	Alabama
Chicago Coll. of Med. and Surg.		(1909), (1917, 3)	Illinois
Hahnemann Med. College and Hospital of Chicago		(1905)	Illinois

Northwestern University	(1915), (1917, 2)	Illinois
Rush Medical College	(1917)	Illinois
Medical School of Maine	(1907)	Maine
College of Phys. and Surgs., Boston	(1916)	Maine
University of Michigan Medical School	(1918)	Michigan
University of Minnesota Medical School	(1918)	Minnesota
Kansas City Hahnemann Medical College	(1914)	Kansas
St. Louis College of Physicians and Surgeons	(1907)	Illinois
St. Louis University	(1909), (1915), (1919)	Missouri
University of Missouri	(1904)	Wisconsin
John A. Creighton Medical College	(1905)	Nebraska
	(1907) Oklahoma, (1917, 2)	Nebraska
University of Nebraska	(1911), (1917)	Nebraska
New York Homeopathic Medical College and Hosp.	(1889)	New Hamp.
Ohio State University College of Med.	(1917)	Ohio
Western Reserve University	(1913)	Ohio
Milwaukee Medical College	(1907)	Wisconsin
University of Edinburgh	(1912)	Kansas

Book Notices

ON GUNSHOT INJURIES TO THE BLOOD-VESSELS, FOUNDED ON EXPERIENCE GAINED IN FRANCE DURING THE GREAT WAR, 1914-1918. By George Henry Makins, G.C.M.G., C.B., President of the Royal College of Surgeons of England. Cloth. Price, $5.50. Pp. 251, with 64 illustrations. New York: William Wood & Co., 1919.

This book presents, first, reports on the primary treatment of wounds by various surgeons working at the casualty clearing stations in the British Army, and, secondly, a series of case reports collected from hospitals on the lines of communication and during a service of five months at a base hospital in London. The author discusses several of the important conditions affecting the frequency of injuries to blood vessels. He states that the existence of a contusion of the arterial wall is not readily determined in the absence of ocular demonstration, as obliteration of the peripheral pulse may equally denote a contused lateral wound, complete severance or, as shown by explorations, no appreciable lesion at all. He recommends Bayliss' 6 per cent. gum arabic solution except in very acute hemorrhage, in which case he advises whole blood to replace the blood lost. Observations are presented which oppose the view that actual dilatation of the heart may be present in subjects of arterial wounds. Rather a want of tone in the heart muscle accounts for the outward displacement of the cardiac apex. This condition, Makins states, is similar to that observed in the unwounded at the front and diagnosed "disordered action of the heart." Pronounced cardiac systolic murmurs were observed frequently in thirty-seven out of 180 cases of arterial lesions. Eighteen were arteriovenous, and nineteen pure arterial wounds. The development of arterial hematoma and the various kinds of aneurysms and aneurysmal varix are described in detail. The author says that patients who have suffered a recent hemorrhage should not be operated on; while they may seem to be in good condition, they may fail to recover from the anesthetic and die within a few hours. Local anesthesia and careful hemostasis are indicated. Operation was of value when vasomotor and secretory disturbances were present. Mobilization of the nerve trunks accompanies operation, as it prevents secondary vascular changes in many cases. Observations tend to show that trophic changes are due not to vascular injury alone but to associated nerve injury. One new practical point which has been proved in this series is that the vein also should be ligated, following ligation of a main artery. To leave the vein viable diminishes the residual blood pressure maintained by the collateral circulation, and predisposes to gangrene. When suture is impossible in a main artery, the circulation may be maintained by means of a Tuffier tube, which may be gradually obliterated by a blood clot, giving the collateral circulation a chance to become enlarged. Much better results were obtained from the treatment of blood vessel injuries after ligation of both artery and vein and improved initial treatment of the wound. The result of injuries of the blood vessels illustrates the sinister influence of interference with the blood supply to a part on the development of anaerobic gangrene. The reader will be disappointed by the lack of emphasis on operative technic, and the absence of detailed description. The review of the cases illustrates the difficulty of following up cases in the army, and shows the necessity for a better system of postoperative observations.

Medicolegal

Liability for Erysipelas—Touching Reputation

(Hanson v. Thelan (N. D.), 173 N. W. R. 457)

The Supreme Court of North Dakota, in affirming a judgment for $300 damages in favor of the plaintiff, says that he, a boy 16 years old, sustained a fracture of his right leg between the knee and the ankle. Both bones were fractured. The boy was placed in a hospital under the care and in charge of the defendant. There was some testimony in the record that for about three days the defendant applied ice packs to reduce the swelling. Then he set the bones and enclosed the leg and foot in a plaster cast. The boy complained of suffering pain, and in about a week the cast was cut open and the leg was tightly bandaged with cloths. Three weeks later these bandages were taken off, and a board was placed under the leg and foot; they were wrapped in bandages, and a weight and pulley were attached. About two weeks after that these appliances were removed, and a shoe was laced on tightly, next to the bare foot, with some cotton batting inserted, and a weight and pulley were attached. Prior to the attaching of the last mentioned appliances, there were sores or bruises on the foot. Some two weeks later, the shoe was removed, after the boy had complained of suffering, and the foot was then black and blue. Three days after that the defendant put some salve on these sores. A physician from Bismarck came and examined the boy, and stated that erysipelas might be expected. The boy became quite ill, and was removed to a hospital at Bismarck, where erysipelas developed, and where he became very ill for many days, and remained for seven weeks. The main question in the record was whether the erysipelas developed from the method of treatment accorded by the defendant, and whether the defendant was derelict in his duty in that regard. The defendant contended that the evidence was insufficient to warrant the verdict for the reason that there was no direct evidence in the record that the condition of erysipelas was brought on the plaintiff by any act or omission of the defendant; also that the plaintiff by his own conduct in going out when the fracture was mending contrary to the instructions of the defendant, and otherwise disobeying instructions given by the defendant, precluded any recovery.

The law is now well settled that the physician owes to his patient the duty to exercise reasonable and ordinary care, diligence and skill such as are ordinarily possessed by physicians practicing in similar localities in the same general line of practice. It is equally well settled that the patient must not have contributed to his injury in any degree; that he must conform to all reasonable directions of his physician—otherwise he cannot recover. In other words, in an action against a physician for breach of his professional duty to his patient, the patient cannot recover if he has not conformed to all reasonable directions of his physician, or if his conduct has contributed to the injury on which the action is based. Under the evidence in this case, the court is of the opinion that the question of the defendant's negligence and of the plaintiff's contributory negligence were fairly questions for the jury. With reference to the contention that there was no direct or positive evidence to show that the resulting erysipelas was proximately caused by the acts of the defendant, the court is satisfied from a consideration of the testimony of the laymen, in connection with the expert testimony of two physicians for the plaintiff, that there was no error in submitting the question of the defendant's negligence to the jury. There was some evidence that the manner in which the shoe was bound to the foot was not proper, and that it was not examined sufficiently regularly or often, although the expert evidence in this regard was not strong.

The defendant asserted that his good reputation as a physician was at stake, and that this court should not condemn him as an incompetent or careless practitioner, on the record herein. It does not follow that this judgment so rendered, or its affirmance, does so condemn the defendant. Surely

physicians and surgeons are liable to make mistakes and to err in the performance of their duty to the patient occasionally, just the same as any other profession or any other trade. For a physician or a surgeon to assert that he is infallible and never makes a mistake is to place his ability and learning above the usual and ordinary run of human experience.

Recovery Allowed for Professional Services

(Brooks v. Aldrich et al. (R. I.), 107 Atl. R. 100)

The Supreme Court of Rhode Island, in overruling the defendants' exceptions and remitting this case with instructions to enter judgment on a verdict for $4,000 in favor of the plaintiff, says that the action was brought by the plaintiff against the executors under the will of one Benedict to recover for personal services alleged to have been rendered to Mr. Benedict at his home and at the plaintiff's office daily, including week days and Sundays, day and night, for medicines, medical advice, and for treatment by the plaintiff's assistant and under his direction, by electric massage, etc., during the period from Sept. 1, 1909, to April 20, 1915, exclusive of the months of July and August in each year; also for services rendered during July and August, 1912, in going to Europe at the request of Mr. Benedict and there performing services of the same nature, and $1,500 for expenses actually incurred by the plaintiff on that trip; the total amount due the plaintiff being alleged to be $13,150 and interest. Mr. Benedict was a bachelor, who died in April, 1915, at about the age of 78. The plaintiff was a physician who specialized in treatment by electricity, Swedish movement and massage. For many years he had been an intimate friend of Mr. Benedict, and had treated him for various troubles during that time, or up to 1899, when the plaintiff moved to New York State, but testified that he returned in 1909 at the request of Mr. Benedict, for the purpose of taking care professionally of the latter during the remainder of his life, Mr. Benedict having promised, if he would do so, to provide generously for the plaintiff in his will. As no legacy was left to the plaintiff by Mr. Benedict, this suit was brought to recover from Mr. Benedict's estate for the value of the services rendered to him. The trial of the case required eight days, and the defendants in presenting their defense were properly allowed considerable latitude in the presentation of testimony. The defense was a denial of the amount and value of the services claimed to have been rendered, and payment. Prior to 1899, when the plaintiff moved away, Mr. Benedict paid him usually each month for services rendered. From 1909 until the death of Mr. Benedict there was much evidence to support the plaintiff's claim of a different arrangement. During this period the plaintiff rendered professional services to Mr. Benedict. No charge was made on his books therefor, and the defendants, although it appeared that Mr. Benedict was a man of very careful business habits, were able to produce but two receipts for small amounts showing payments to the plaintiff. Without referring in detail to the testimony, there was sufficient evidence, if believed by the jury, to warrant the verdict. The substance of one group of the defendants' exceptions was objection to the testimony of the plaintiff as to the reasonable value of his services; but the defendants took nothing by these exceptions. The plaintiff was qualified to give his expert opinion, and the fact that he was an interested party had a bearing on the weight to be given to his testimony, but not on its admissibility.

Suicide as Evidence of Insanity

(Wallace v. United Order of Golden Cross (Me.), 106 Atl. R. 713)

The Supreme Judicial Court of Maine says that the presumption of sanity must be entertained in the absence of proof, and when the record is silent. This presumption is not overthrown by the act of committing suicide. Suicide may be used as evidence of insanity, but, standing alone, it is insufficient to establish it. Insanity cannot be predicated simply on the act of self-destruction; for human experience has shown that sane men have taken their own lives.

Killing of Insured Physician on National Guard Duty

(Interstate Business Men's Accident Association of Des Moines, Iowa, v. Lester (U. S.), 257 Fed. R. 225)

The United States Circuit Court of Appeals, Eighth Circuit, in affirming a judgment in favor of Mrs. Lester for the full amount of an accident insurance policy issued by the defendant association on the life of her husband, says that the policy insured him "while he is engaged in the occupation of a physician and surgeon . . . in case of death effected directly and independently of any other contributing, concurring or intervening cause, by external violent and accidental means." When the insurance was taken out, in January, 1913, and at the time of his death, Dr. Lester was engaged in the practice of his profession at Walsenburg, Colo. He was also a member of the national guard of that state, holding the rank of major, and assigned to the medical corps. When the governor called the national guard into service during the strike of the employees of the Colorado Fuel & Iron Company, Dr. Lester jointed his company as a part of its medical corps. On the morning of April 29, 1914, he visited a number of his patients in Walsenburg, professionally. He then went with a small detachment to a point a few hundred yards from the city; the force having been sent out to reconnoiter and resist, if necessary, the activities of strikers who were in the foothills or mountains near the town. The lieutenant of this force was wounded. Dr. Lester had just finished dressing his wound, and was down on his hands and knees in a railroad cut observing some men through his field glass, to decide whether they were strikers or soldiers. He was shot, and died almost instantly. Was he at the time of his death "engaged in the occupation of a physician and surgeon"? Was his death effected wholly by "accidental means"? This action on the insurance policy turned wholly on these two questions, which are answered in the affirmative. The defendant insisted that the language of the policy, when fairly interpreted, confined Dr. Lester to the practice of his profession in the ordinary walks of civil life; that, when he joined his company in the military service to which it was called, he changed his vocation and become, instead of a physician and surgeon, a soldier; but the court does not think this position could be sustained without disregarding the facts. His service with his company was temporary. He was called out to meet an emergency. While the service lasted for some months, it was a side issue. It was known that it would be temporary, and was to be considered as answering a call to suppress a riot, or any other temporary engagement. This measured the term of the service; but the court must look at the character of the service also. Dr. Lester was in no way engaged in the military activities of his company. His services were those of a physician and surgeon. He continued to practice his profession at Walsenburg, as well as attend to the needs of his company. The authorities are uniform that such temporary changes do not constitute a change of occupation within the meaning of insurance policies. To constitute such a change there must be an abandonment of the vocation specified in the policy and the adoption of some other calling. If such temporary activities are to destroy the protection of insurance, it must be by an express provision in the policy. So far as vocation is a factor in determining the hazard, it is based on the average of the whole class. A physician practicing his profession in the congested districts of a large city will be exposed to many hazards to which a physician in a small country town will not be subject. All of these matters, however, are embraced in the general average of hazards of the class of physicians and surgeons. If one individual at one time is exposed to a largely increased hazard, as Dr. Lester was on the occasion of his death, others will be exposed to hazards falling greatly below the average. These are factors on which the insurance is based. Nor is it true that simply going into an environment of greatly increased hazard, with conscious knowledge of such hazard, will cause injury or death which results therefrom not to be accidental within the meaning of such policies as this one.

Social Medicine and Medical Economics

ADVERTISING IN RURAL PUBLIC HEALTH WORK

An Account of Some Methods Used Successfully in Lee County, Mississippi

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Preventive medicine has been given a tremendous impetus by the experiences of the late war; but if work of this nature is not pushed energetically while the interest still lives, the old apathy will return. Public health work is a business and will yield the greatest results if business methods are used. This applies equally well to the internal organization and to the means used to secure public cooperation, without which the work is impossible. Various forms of public health work have been carried on long enough to develop good internal organization and to construct excellent programs, but these often fail in securing their maximum success because public sentiment is not behind them.

In the ordinary lines of business it is well known that many firms which manufacture a superior line of goods never grow, while others whose products are no better, or even of inferior quality, have an enormous development, owing to the wise and extensive use of advertising. In this way the public is informed of the particular merits of the firm's goods, and a demand for them is created even in the most remote communities. With this idea in mind, the Department of Rural Sanitation of the Mississippi Board of Health decided to use advertising methods in its health campaign in Lee County.

To be successful, the methods employed in advertising must be adapted to the people whom it is desired to reach. Mississippi is essentially a rural state with a population of approximately 2,000,000 and with no city of more than 25,000 people. Most of the county seats are cities of from 3,000 to 10,000, and the other communities vary in size from a mere cluster of houses to towns of 800 inhabitants. The population is about evenly divided between white and black.

Individualism is strong among the white population, for there have been no foreign accretions, at least since the Civil War. The native American cannot be coerced. Any change from the old customs and habits of life demanded by outside authority constitutes for him a violation of personal rights and liberty. When the national government first enforced the laws to protect the cattle against the Texas fever, several of the dipping vats in this county were dynamited. But once convinced, the native American becomes a willing co-worker. He can be more easily led if the natural leader of his community is first persuaded. These strategic men usually live in the towns, where most of the progressive people are to be found. Between these towns there is often jealous rivalry, but a community or county spirit has never been well developed.

Public health work in this state had its inception ten years ago and is still in its infancy, although developing rapidly. It remained for us to plan in Lee County a campaign that would educate the people along health lines, and at the same time develop a community and county spirit, which are telling, or even indispensable, factors in developing permanent health work. A county with a boosting spirit will not permit disease to run unchecked after the first enthusiasm of a health campaign has died down. The program which we outlined to the progressive business and professional men of the county at once won their backing.

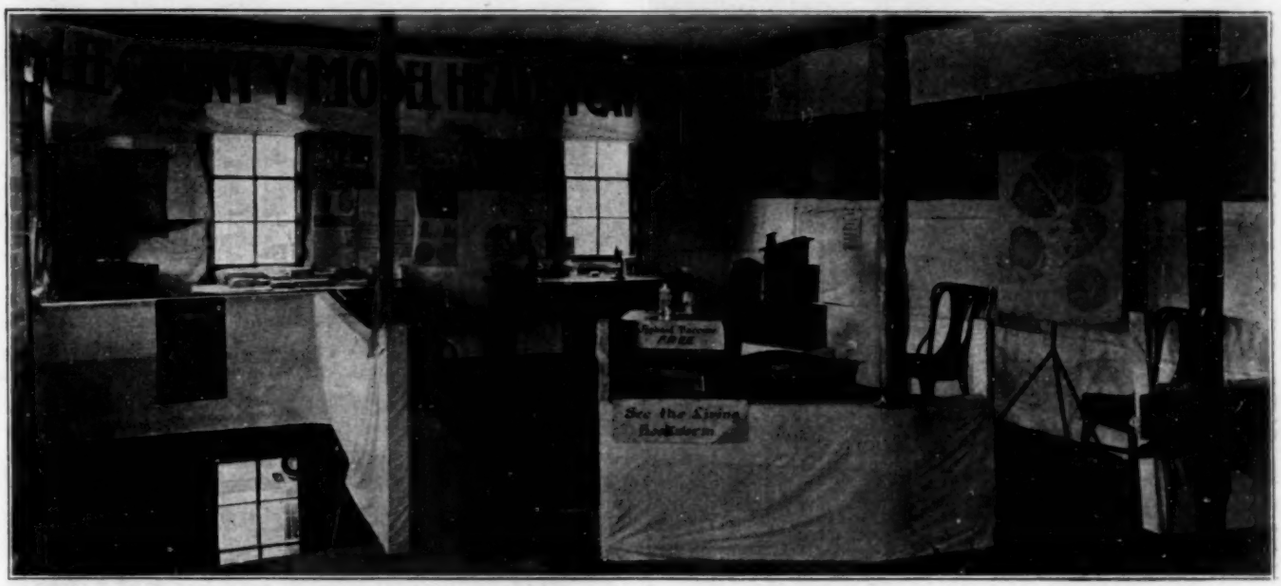


Exhibit at fair.

As in every other community, the finances were not unlimited, and every dollar had to be stretched to the utmost. The methods employed in the campaign were adaptations of means used in other lines of business to interest prospective customers and make them buy. From the first, we let no opportunity slip to bring our work to the attention of the people. Articles were written for the local newspapers, attractive signs were placed in prominent places, and stereomotorgraphs showing pictures of our work were placed in conspicuous positions in the windows of business houses in Tupelo, the county seat and headquarters of our organization. The arrival of a circus in the city afforded an excellent opportunity for publicity, for, without any expense, we

were able to place a sign on one of the elephants, advertising our work. Though utilizing every opportunity that thus presented itself, in carrying forward our campaign we relied mainly on our original advertising devices, a description of which may prove interesting.

Advertising the health campaign at the circus.

THE PUBLIC MEETINGS

As would naturally be expected in a community of intense individualism, we encountered serious opposition when we began our work in the county. Petitions were circulated against us in every district. We wanted the people to feel that we were really their friends and not the representatives of some unknown arbitrary force that had come to change their methods of living. We knew that nothing could be more potent in overcoming their distrust and suspicion than well planned public meetings, in which the people might become acquainted with the workers and the work that was being done.

GOOD ROADS, GOOD HEALTH, GOOD CITIZENSHIP
HEALTH THE COUNTY'S BEST ADVERTISEMENT
HEALTH OUR GREATEST ASSET
TAKE THE RIGHT ROAD TO HEALTH
CLEAN UP AND KEEP CLEAN
A LITTLE PRECAUTION MAY ADD YEARS
COLLECT YOUR THREE SCORE YEARS AND TEN
SLEEP WITH YOUR WINDOWS OPEN
A SANITARY PRIVY A LIFE SAVER
EVERY HOME PROPERLY SCREENED AND CLEAN
YOU ARE NOT GERMPROOF, WAKE UP
BREATHE THROUGH YOUR NOSE
FLIES, HOW LONG SHALL WE EAT TOGETHER?
WHEN ONE IS SICK, KEEP OTHERS AWAY
MEDICAL INSPECTION FOR SCHOOLCHILDREN
DON'T DEPEND ON SOME ONE ELSE
COVER YOUR MOUTH WHEN YOU COUGH
WASH YOUR HANDS BEFORE HANDLING FOOD
DISEASE PREVENTION COSTS LESS THAN CURE
CARELESS SPITTING SPREADS TUBERCULOSIS
SHARE THE ROAD; YOU CANNOT BE HEALTHY ALONE
BUY NOTHING IF NOT SANITARY
PROTECT OTHERS FROM DISEASE AND DEMAND PROTECTION
DECLARE WAR ON FLIES AND MOSQUITOES
WHY TRAVEL WITH DISEASE?
BETTER MILK, BETTER BABIES, BETTER CITIZENS
THE COUNTY DE SOTO WAS SEEKING
COUNT THE COST OF SUPPORTING THE MOSQUITO
HEALTH DEMANDS COMMUNITY COOPERATION

A few of the sentences used on mile post signs.

The ordinary public health meeting is not exceedingly popular. We therefore decided to use moving pictures to secure larger crowds to whom we could explain the advantages of the sanitary measures we were advocating. The films were used simply as a means of entertainment and not necessarily to teach health subjects, although we realize that a moving picture that will educate, and at the same time furnish enjoyment, would be the ideal. Such films are rare, but in the near future we shall be able to describe one that we are now producing.

A Delco representative readily consented to furnish the lighting system, the moving picture projector, and films if we would pay only the return charges on the films. Inasmuch as the lighting system was mounted on a Ford truck, we were able to hold such meetings in the most remote communities. A phonograph, which a local dealer lent to us, was also a part of our equipment. In the course of time we found it to our advantage to arrange for a supply of films from a film exchange in a neighboring city, and to use a truck belonging to the state board of health and equipped with a Delco system.

The results were remarkable, for instead of scant crowds, our audiences varied from 100 to 500 in size. Several times the crowd was so large that we were compelled to hold the meeting outdoors. But the most pleasing result to us was the changed attitude of the people toward us throughout the county. It was necessary only to announce in a church or school that one of our meetings was to be held, and the place of meeting was filled at the appointed hour.

BULLETINS AND HEALTH SEALS

Intensive health work is necessarily a slow process, and in a county of 28,000 people several months must elapse before every home is surveyed. In order to stimulate interest and promote health education in every home in the county throughout the progress of our work, a weekly bulletin was published and widely distributed in the county.

Mile post sign.

Another type of bulletin was published monthly for distribution throughout the state. This was a challenge to citizens of other counties to awake to the necessity for health campaigns in their communities, such as is now in progress in Lee County.

One of the health posters of the American Medical Association has been adapted to local conditions, and a seal

printed to be used on all mail of the department of rural sanitation. The state board of health, several of the Mississippi schools, and some of the local business men have agreed to use them on all of their correspondence.

Both of these means of advertising have a double purpose, for in addition to keeping interest alive in Lee County, they have been useful in arousing the interest of other counties in public health work.

Warning at approach to curve.

EXHIBITS AT LEE COUNTY FAIR AND STATE HEALTH OFFICERS' MEETING

At the Lee County fair, although our booth was located on the second floor among the educational displays, it was visited by more people than any other one exhibit. The bare walls of the booth were covered with white cloth, and ferns, green trimmings and a phonograph added to the attractiveness of the display.

The visitor was shown first the living hookworm under the microscope and then the two sources of human infection, poluted soil and vegetables. Two bottles of milk, one infected with typhoid bacilli and the other pure, were shown to demonstrate that there is no apparent difference caused by this dangerous contamination. The fact that both typhoid fever and hookworm disease are spread by the careless disposal of human excreta was forcibly explained, and then the sanitary privy that we were advocating was demonstrated. Infant welfare and malarial charts formed part of the exhibit. On leaving, the visitor was given literature and asked to register so that we might send him further information concerning the progress of the work. More than 8,000 visitors came into the booth. The register showed that these people came from seven different counties. Demands have since come to us for the same type of campaign in several of the neighboring counties.

During the state health officers' meeting at Jackson, a similar exhibit was demonstrated. Several new features were added, among them a miniature section of Lee County, showing the road signs, next to be described, and an educational feature illustrating the equipment which we take to our community meetings in the county. This exhibit received favorable comment from men prominent in health work throughout the United States, and has endeared us to the people of Lee County.

THE MILE POST SIGNS

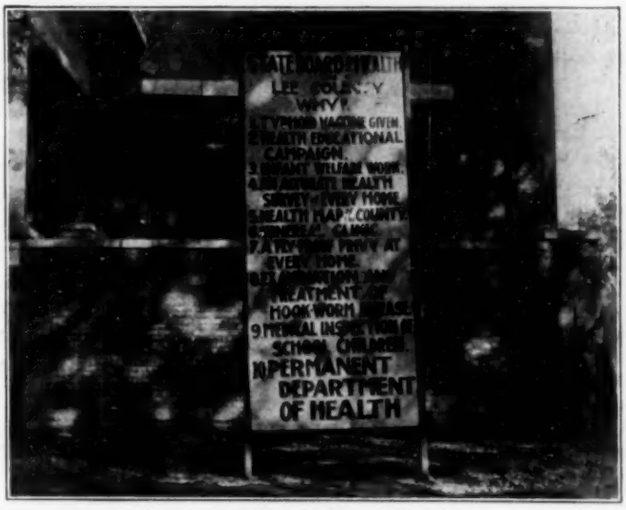
A design for a mile post sign was prepared, such as the one in the illustration, with a top board for advertising the county as a model health county and giving the number of miles to the cities on that road, and featuring a health sentence. On the lower part of the sign there is space for two business advertisements. The design with specifications was submitted to various sign painters for bids, and the lowest bidder secured the contract. The plan was then placed before the business men with a price for advertisements such that the cost of the two would just cover the cost of the sign. They grasped the idea so eagerly that we soon had demands enough to place a sign on every mile of road in the county and to place a warning sign on both approaches to every dangerous turn. We were compelled to turn some advertisers away.

THE COUNTRY NEEDS YOU	KILL EVERY FLY
PRECAUTION PAYS	BUILD SANITARY PRIVIES
DON'T FLIRT WITH DEATH	POLLUTE NOT THE SOIL
ESTABLISH GOOD HABITS	FILTH, FLIES, FEVER
DON'T MORTGAGE YOUR LIFE	DEMAND CLEAN MILK
PREVENTION BEATS CURING	SAFETY IN SANITATION
PROLONG YOUR LIFE	WHY BE SICK?
AVOID CONTAGIOUS DISEASES	KEEP CLEAN
KEEP A LEVEL HEAD	DEMAND SANITARY SCHOOLS
COLDS ARE CONTAGIOUS	

A few of the sentences used on danger signs.

Once the idea and its significance were appreciated by the people of the county, we had no trouble at all in persuading the chamber of commerce to place an arch over each entrance to the county. On one side of the arch were the words "Welcome to Lee County, the model health county" and on the other "Come again to Lee County, the model health county," The chamber of commerce also agreed to place sixty signs at important cross roads to explain why the health campaign was in progress in the county.

To increase the public interest in these signs a contest was held to secure the best possible health sentences for



A sign at an important cross road.

the mile posts. The business men were approached and readily agreed to furnish the three necessary prizes. Sentences were received from men, women and children from one end of the county to the other. Incidentally, it may be of interest to note that the first prize was won by the daughter of the first man in the county to complete the needed sanitary improvements on his premises.

By means of these signs we have not only boosted county pride and spirit, aided visitors, and advertised our merchants,

but through the old familiar didactic method of repetition we have driven home to the people of the county the need for, and the methods of, preventing disease. The whole county looks on the signs as a county effort, and the health campaign as its own.

RESULTS OF PUBLICITY

In a county which was originally hostile to our work, with the exception of a few progressive citizens in the city of Tupelo, we have in three months been able to accomplish the following:

1. To make a health survey of 2,712 homes, learn the diseases with which they have been afflicted during the last five years, and locate each accurately on a health map of the county so that future work will be more easy.
2. To examine 8,907 people for hookworm and furnish treatment to each person found infected.
3. To construct 827 sanitary privies, which will minimize the spread of filth diseases.
4. To distribute more than 30,000 pieces of literature.
5. To vaccinate 200 people against typhoid.
6. To make 600 inspections of business houses.
7. To make complete physical examinations of 1,100 schoolchildren.
8. To control an epidemic of scarlet fever.
9. To contribute to the county a vision of what may be accomplished by community effort.
10. To secure cooperation of the public such that a permanent department of health can and will be established next year.

CONCLUSIONS

1. Advertising is an American method and wins Americans.
2. Advertising is invaluable in rural public health work.
3. Carefully planned advertising can be carried on at practically no expense to the health officials.
4. Such methods produce the maximum results in securing the backing of business men.
5. Wise advertising educates the community along health lines.
6. Such advertising as we have described unifies a community and gives it an aggressive spirit.
7. It can be done.

AN EARLY VENTURE IN INTESTINAL SURGERY

The modern surgeon who is inclined to note with pride the achievements in his field perhaps does not realize that even some of its most technical developments were duplicated long ago. Frederick Smith, in his work 'The Early History of Veterinary Literature and Its British Development," quotes a statement by Harward, made in 1673, concerning the repair of intestinal wounds:

"Then if there be any torn along the guts, or else jagged, that may not be stitched together for it will not grow, neither will that which is black, cold, and dead, in which case thou must do this. First, lay the two broken ends that should grow together the one a little over the other in your hand; then cut them both off at once with a pair of scissors, so that the new cut ends may be joined close together, but first cut the two broken ends off close to the mid-rise (mesentery) and cast them away, then with a fine needle and thread, or silk, stitch the two cut ends together so that they may gently meet and not be strained. Begin first to stitch at the mid-rise (mesentery) and round about the gut till you come to the same place again and then make fast your thread. But in this stitching remember this that as you must not draw your seam too hard for fear of crushing that tender skin, neither must you leave it too slack for fear the dung issue out, for if you miss either way you are sure to fail in your cure. When you have stitched the gut ends together with a fine and thick (close) seam and wiped away the blood and dirt clean, then anoint it with hog's grease and the juice of Comfrey mixed. This done put the guts into the belly and stitch up the breach, first the inner side (peritoneum) then the middle (muscles) and then dress with moulten butter and stitch up the outermost skin as is taught before, and use the beast as in the former cure, only do this more, that is, give him the juice of Comfrey in strong ale or beer to drink, and if he dung and stink in two or three days, there is no doubt of the cure. But in both these cures be sure of good help and be quick at thy work and be careful withal."

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

December, 1919, **80**, No. 6

*Incidence of Malignancy in Diseases of Gallbladder. J. F. Erdmann, New York.—p. 618.
*Control of Venereal Disease in Detention Home for Women in Times of War and Peace. P. Findley, Omaha.—p. 623.
*Value of Detention as a Reconstruction Measure. C. C. Pierce, Washington, D. C.—p. 624.
*Pioneering in Venereal Disease Control. A. J. McLaughlin. Sioux City, Ia.—p. 636.
*Detention and Treatment of Infected Women as a Measure of Control of Venereal Disease in Extracantonment Zones. W. F. Draper, Richmond, Va.—p. 542.
*Safety Factors in Team Work of Operator and Anesthetist. J. J. Buettner, Syracuse.—p. 646.
*Some Adjuncts which Promote Efficiency in the Use of Local Anesthesia. R. E. Farr, Minneapolis.—p. 653.
*Surgical Barrage. C. W. Moots and E. I. McKesson, Toledo, Ohio.—p. 661.
*Advantages of Nitrous Oxid-Oxygen in Labor. C. E. Turner, Columbus, Ohio.—p. 670.
Postoperative Analgesia. B. Van Hoosen, Chicago.—p. 677.
*Prophylaxis of Gestation. A. B. Davis, New York.—p. 682.
*Prenatal Care. S. J. Goodman, Columbus, Ohio.—p. 689.
*Care of Bowels During Puerperal Period; Further Report. R. McPherson, New York.—p. 698.
*Method of Placing Sutures in Immediate Repair of the Perineum. W. D. Porter, Cincinnati.—p. 701.
*Median Episiotomy in Primiparous Labors. J. A. Harrar, New York.—p. 705.
Problem of Hemorrhage in Obstetric Cases. A. H. Bill, Cleveland.—p. 708.
*Inversion of Uterus. H. W. Yates, Detroit.—p. 712.
*Cystic Ovary. F. Reder, St. Louis.—p. 719.

Malignancy in Diseases of the Gallbladder.—This paper was abstracted in THE JOURNAL, Oct. 25, 1919, p. 1307.

Control of Venereal Diseases.—This paper was abstracted in THE JOURNAL, Oct. 18, 1919, p. 1238.

Detention as a Reconstruction Measure.—This paper was abstracted in THE JOURNAL, Oct 18, 1919, p. 1238.

Pioneering in Venereal Disease Control.—This paper was abstracted in THE JOURNAL, Oct. 18, 1919, p. 1238.

Venereal Diseases in Extracantonment Zones.—This paper was abstracted in THE JOURNAL, Oct. 18, 1919, p. 1238.

Team Work of Operator and Anesthetist.—This paper was abstracted in THE JOURNAL, Oct. 18, 1919, p. 1238.

Efficiency in Use of Local Anesthesia.—This paper was abstracted in THE JOURNAL, Oct. 18, 1919, p. 1238.

Surgical Barrage—This paper was abstracted in THE JOURNAL, Oct. 18, 1919, p. 1238.

Advantages of Nitrous Oxid-Oxygen in Labor.—Having used this analgesic for some years, Turner offers five good reasons for its value: 1. The entire second stage is practically painless. 2. There is no exhaustion. 3. The postpartum psychoses are greatly lessened. 4. There are fewer lacerations of the mother's soft parts, especially of the perineum. 5. Healthy babies are delivered. Convalescence is rapid; this, of course, depends to some extent on the nature of the delivery. Involution takes place promptly, and the patient's recovery is uneventful. The function of the breasts is not disturbed by the use of gas-oxygen. Ordinarily the patient takes gas-oxygen very readily. The uterine contractions push the head farther and farther down into and through the pelvis, and it is finally born without much pain. In fact,

labor is in all respects normal. As a rule, the multipara, who has experienced the older methods of delivery, is better satisfied when delivered with the aid of gas-oxygen.

Prophylaxis of Gestation.—This paper was abstracted in THE JOURNAL, Oct. 25, 1919, p. 1307.

Prenatal Care.—This paper was abstracted in THE JOURNAL, Oct. 25, 1919, p. 1307.

Care of Bowels During Puerperal Period.—This paper was abstracted in THE JOURNAL, Oct. 18, 1919, p. 1239.

Method of Placing Sutures.—This paper was abstracted in THE JOURNAL, Oct. 18, 1919, p. 1239.

Median Episiotomy in Primiparous Labors.—This paper was abstracted in THE JOURNAL, Oct. 25, 1919, p. 1307.

Inversion of Uterus.—This paper was abstracted in THE JOURNAL, Oct. 25, 1919, p. 1307.

Cystic Ovary.—This paper was abstracted in THE JOURNAL, Oct. 25, 1919, p. 1307.

American Journal of Physiology, Baltimore

Dec. 1, 1919, **50**, No. 3

*Respiratory Volumes of Men During Short Exposures to Constant Low Oxygen Tensions Attained by Rebreathing. M. M. Ellis, New York.—p. 267.
*Alveolar Air and Respiratory Volume at Low Oxygen Tensions. B. R. Lutz and E. C. Schneider, New York.—p. 280.
Compensatory Reactions to Low Oxygen. H. W. Gregg, B. R. Lutz and E. C. Schneider, New York.—p. 302.
*Reactions of Cardiac and Respiratory Centers to Changes in Oxygen Tension. B. R. Lutz and E. C. Schneider, New York.—p. 327.
*Experimental Studies of Ureter; Cause of Ureteral Contractions. Y. Satani, Baltimore.—p. 342.
*Effects of Increasing Intracranial Pressure in Rabbits. L. M. Moore, Berkeley, Calif.—p. 352.
Distribution of Nonprotein Nitrogen in Cases of Anaphylaxis and Peptone Poisoning. K. Hisanobu, Tokyo, Japan.—p. 357.
Effect of Quinin on Nitrogen Content of Egg Albumen of Ring Doves. E. H. Hebre and O. Riddle, Cold Spring Harbor, L. I.—p. 364.
Nose Licking Reflex and its Inhibition. S. J. Meltzer and T. S. Githens, New York.—p. 377.
*Infra-red Radiant Energy and the Eye. M. Luckiesh, Cleveland.—p. 383.
*Activity in Endocrine Glands; V. Isolated Heart as Indicator of Suprarenal Secretion. W. B. Cannon, Boston.—p. 399.
Effect of Work and Heat on Hydrogen Ion Concentration of Sweat. G. A. Talbert, Baltimore.—p. 433.
Effect of Physical Training and Practice on Pulse Rate and Blood Pressures During Activity and During Rest. P. M. Dawson, Madison, Wis.—p. 443.

Effect of Low Oxygen on Respiratory Volume.—The respiratory volumes of twenty-nine men during the reduction of oxygen tension by rebreathing and during short exposures to constant low oxygen tension following the period of rebreathing were studied by Ellis in connection with the sea level respiratory volumes. An increase in the respiratory volume was noted at the end of the fifth minute of rebreathing, at an average of 18.1 per cent. oxygen (approximately equivalent to 4,000 feet altitude) in twenty-three of the twenty-nine subjects. The respiratory volume during the first ten minutes of the exposure to constant low oxygen tension, varying from 5,000 to 21,000 feet equivalent altitude, was greater than the sea level volume in thirty-two of the thirty-six subjects. The respiratory volume of seventeen of the thirty-six subjects fell during the first ten minutes of the exposure to constant low oxygen tension to a volume lower than that moved during the reduction of oxygen by rebreathing although still greater than the sea level respiratory volume. This fall in respiratory volume during the first ten minutes of exposure to constant low oxygen tensions was correlated apparently with compensations to low oxygen advantageous to the subject. The return to sea level oxygen tension was followed by a prompt return to the sea level respiratory volume.

Alveolar Air and Respiratory Volume at Low Oxygen.—Twenty-four men were taken to 352 mm. pressure in a low pressure chamber at a rate equivalent to an ascent of 1,000 feet per minute. In these cases the average alveolar oxygen tension fell 66 per cent. and the alveolar carbon dioxid fell 24 per cent. The average carbon dioxid tension was definitely lowered at 656 mm. (4,000 feet) which indicates that the onset of increased breathing had occurred. The lowest carbon dioxid tension occurred about five minutes after 380 mm. was reached, when the reduction was equivalent to an ascent of 1,000 feet per minute. Both oxygen and carbon dioxid alveolar tensions responded quickly to rapid successive reductions of barometric pressure to 428 mm.

Reaction of Medullary Centers to Low Oxygen.—According to Lutz and Schneider the cardiac and respiratory medullary centers in man respond quickly to changes in the partial pressure of oxygen. A decrease in oxygen stimulates while an increase in oxygen inhibits the action of these centers.

Experimental Studies on Ureter Contractions.—The experiments reported on by Satani showed that distention of the ureter lumen causes the development of contractions, which increase to a certain limit with an increase in pressure. The chemical composition of the kidney secretion may also effect the development of ureteral contractions by means of a reflex action. The viscosity of the fluids which pass through the ureter lumen affects the contractions only to the slightest degree. Solid bodies, such as a calculus, however, produce vigorous tonic contractions. Satani concludes that the peristalsis of the ureter should be referred not to one, but to several factors, which act mainly in cooperation, but which vary in value under various conditions.

Increase in Intracranial Pressure in Rabbits.—Increasing the intracranial pressure in rabbits 20 mm. of mercury (272 mm. of water) or more, Moore says, results in accelerated respiratory movements followed by their cessation, slow heart beat, vasoconstriction, dilatation of the pupils, spasms of asphyxiation, and finally death within from one to three minutes unless artificial respiration is used or the pressure is released. Moderate degrees of pressure, 15 mm. of mercury (200 mm. of water) or less, cause increase in the rate of heart beat, vasoconstriction and a rise in body temperature. The pressure symptoms and death following "heat puncture" operations were found only when an opening was left in the cranium; and, by comparison with the symptoms attending artificially increased intracranial pressure and clinical cases of brain lesions, seem to be due to the same cause. The cause of death, and the preceding symptoms, when the intracranial pressure is raised, appears to be stimulation followed by paralysis of the principal bulbar centers.

Infra-Red Radiant Energy and Eye.—The work reported on by Luckiesh was prompted by the recently developed opinion that eye glasses, especially in the industries, should not transmit infra-red radiation. The data presented in this paper do not directly reach the root of the problem but they are of considerable importance. Energy quantities and densities in the eye mediums are established and should aid the physiologist who is interested in the question. This paper is confined purely to the physical aspects of spectral energy distribution in illuminants, of the absorption by the eye mediums, of optical laws, of luminous efficiency of illuminants, etc.

Action of Suprarenal Secretion.—Results reported by Cannon present the first indication that under quiet, peaceful conditions there is no suprarenal secretion or a secretion so slight as not to affect the denervated heart, an extremely sensitive indicator. These observations prove that suprarenal secretion is not a necessity, at least in times of serene existence. Adrenin is secreted, however, in times of great emotional stress and under circumstances which cause pain or asphyxia. The function of the suprarenal medulla is to be looked for under conditions which rouse it to action. Excitement, pain or asphyxia are self-preservation. Under such circumstances, as has been emphasized in the presentation of the emergency theory, the operation of the sympathetic division of the autonomic system together with the aid which adrenin affords will muster the resources of the organism in such a way as to be of greatest service to such organs as are absolutely essential for combat, flight or pursuit. It appears, therefore, that the emergency theory of the suprarenal medulla is the only one which thus far has any experimental support.

American Journal of Roentgenology, New York

November, 1919, **6**, No. 11

Roentgen-Ray Study of Abdominal Organs Following Oxygen Inflation of Peritoneal Cavity. W. H. Stewart and A. Stein, New York.—p. 533.
Nontraumatic Epiphyseal Separations. W. A. Evans, Detroit.—p. 543.
Coccidoidal Granuloma. W. B. Bowman, Los Angeles.—p. 547.
Two Cases of Xeroderma Pigmentosum with Malignancy of Eyeball Successfully Treated by Roentgen Ray. G. W. Grier, Pittsburgh.—p. 552.
Open Method of Surgery in Deep-Seated Recurrent Cancer Preparatory to Roentgen and Radium Therapy. E. G. Beck, Chicago.—p. 559.
Relative Absorption of Rays by Skin, Fat and Muscle, as Compared with Various Thicknesses of Aluminum. G. Warner, Chicago.—p. 559.
Technic of Radiotherapy. P. Eisen, Chicago.—p. 559.
Late Results of War Injuries to Chest. H. J. Walton, Baltimore.—p. 568.
Analysis of 1,300 Cases Referred for Gastro-Intestinal Study, with Special Reference to the Importance of Chest Examination of Such Cases. T. A. Groover and A. C. Christie, Washington, D. C.—p. 571.
Roentgenographic Findings in a Series of Chests Examined at a Base Hospital in France. F. F. Borzell, Philadelphia.—p. 573.
Malignant Disease of Lungs, Its Early Recognition and Progressive Development, as Studied by Roentgen Rays. G. E. Pfahler, Philadelphia.—p. 575.

Boston Medical and Surgical Journal

Jan. 15, 1920, **182**, No. 3

Origin of Intrapelvic Treatment of Stump After Supravaginal Hysterectomy for Fibroid Tumor of Uterus. J. R. Goffe, New York.—p. 53.
*Result of Treatment of Neurosyphilis (General Paresis and Cerebrospinal Syphilis).—H. C. Solomon, Boston.—p. 60.
Potency of some French Digitalis Preparations. S. A. Levine, Boston.—p. 64.
Hysteria. D. Nathan, Norristown, Pa.—p. 66.
Acute Nephritis by Absorption of Household Disinfectants (Credin). H. A. Jones, Howard, R. I.—p. 68.

Result of Treatment of Neurosyphilis.—A review four years or more after the dismissal from the hospital of ten cases of neurosyphilis who were reported as aided by antisyphilitic treatment is made by Solomon. Nine of these patients were committed as insane, the remaining case was diagnosed general paralysis but not necessarily commitable. Eight cases were diagnosed general paralysis, two as cerebrospinal syphilis. The diagnosis of cerebrospinal syphilis was changed from general paralysis in one of these two cases only because the case cleared up under antispecific treatment. The mental symptoms were those of paresis. Of the eight cases diagnosed general paralysis, five patients are now living at home. Three are apparently entirely well; two, while not well, are able to care for themselves and live a normal life in the community. Two are dead and one is in a hospital. One of the two who died had a fair remission with economic efficiency for eighteen months and had all laboratory reactions negative at one time. The one who was in a hospital had a remission of three years' duration. Two cases were diagnosed cerebrospinal syphilis (nonparetic), but with marked mental symptoms. One patient left the hospital apparently entirely normal and with negative laboratory signs. He has been lost from view. The other is now serologically negative and mentally normal after four years. Of eight cases diagnosed general paralysis, three patients are apparently entirely well after four years; two are well enough to live outside and care for themselves; one had a remission of more than three years' duration, and is now in a hospital; two are dead, having had a remission of eighteen months each. Of two cases diagnosed cerebrospinal syphilis with mental symptoms, one patient is lost from observation, the other is mentally normal and serologically negative. This report leads the author to feel that it is possible to render help in a portion of cases of general paralysis or cerebrospinal syphilis with mental symptoms, and that intensive, systematic treatment will change the prognosis of general paralysis.

Florida Medical Association Journal, St. Augustine and Jacksonville

December, 1919, **6**, No. 6

The Qualified Nurse. J. E. Boyd, Jacksonville.—p. 113.
Treatment of Ectopic Gestation. T. Truelsen, Tampa.—p. 116.
Some Differences in Therapeutic Response Between Caucasian and Atro-American. G. M. Niles, Atlanta.—p. 118.

Journal of Orthopedic Surgery, Lincoln, Neb.

January, 1920, **2**, No. 1

*Anatomy of Snapping Hip. F. W. Jones, London.—p 1.
Roentgenograms of Case of Tuberculosis of One Hip Associated with Congenital Dislocation of Other Hip. A. R. Jones, London.—p. 4.
*Stripping of Os Calcis. A. Steindler, Iowa City, Iowa.—p. 8.
Treatment of Fractures of Femur from an Orthopedic Point of View. J. P. Jones, Camden, Ala.—p. 13.
Time Element in Reconstructive Surgery. R. W. Johnson, Jr, Baltimore—p. 33.

Anatomy of Snapping Hip.—A clinical study of two cases convinced Jones that the structure which infringes on the trochanter and causes the snap is the tendon developed on the deep surface of the gluteus maximus muscle. This tendon constitutes the insertion of the gluteus maximus to the gluteal ridge of the femur and it was apparent that in the two cases studied the tendon was in an abnormal state of development. That the tendon was the offending structure in these two cases was confirmed by the fact that stitching it down to the whole length of the great trochanter put a stop to the production of the snap.

Stripping of Os Calcis.—The operation which Steindler first described in 1917 consists mainly in the subperiosteal stripping of the muscular attachments to the anterior surface of the os calcis. The operation does not intend to do more than to free a muscle bound claw foot or hollow foot from the strain of contracted musculature of the sole of the foot. Any deformity arising from abnormalities of the skeleton must be taken care of by additional bone operation. In some cases this operation had to be accompanied by osteotomy of the tarsus in order to overcome the cavus deformity of the skeleton. In a series of other cases dropping of the first metatarsal and retraction of the big toe was overcome by Sherman's procedure, that is, by severing the extensor of the big toe beyond the metacarpal phalangeal joint and fastening the tendon to a point proximal to the head of the first metatarsal.

Medical Record, New York

Dec. 6, 1919, **96**, No. 23

Teaching Function of Hospital, with Especial Reference to Gynecology. G. G. Ward, Jr., New York.—p. 909.
Internal Secretions. E. D. Friedman, New York.—p. 916.
*Physical Examination of Applicants for Industrial Positions; with Results of Three Hundred Examinations C. Scheffel, Brookline, Mass.—p. 925.
Sugar Treatment of Tuberculosis. Report of Cases. A. Sterling, Philadelphia.—p. 927.
Forces of Nature. B. Lemchen, Chicago.—p. 928.

Physical Examination of Applicants for Industrial Positions.—Of 300 applicants examined by Scheffel fifty-one presented gross defects. Among these were: enlarged inguinal glands, 13 cases; heart murmurs, 4 cases; ankylosed finger joints, 5 cases; partially amputated fingers, 8 cases; destroyed tendon function, 3 cases; defective vision, 11 cases. In addition to these defects there were thirty-three applicants who had been in this country from four to eleven years who could not read the English alphabet to have their eyes tested by the ordinary Snellen's test type. The scope of these examinations extended from head to foot in a general way, but record was kept only of those defects related to the performance of the duty required of the applicant in case he was accepted for employment. The mentality of all applicants was carefully surveyed with the view of eliminating feebleminded, imbecile and degenerate types. None was found in this series of examinations.

Dec. 13, 1919, **96**, No. 24

Special Factors in Management Favoring Normal Development of Child H. L. K. Shaw, Albany.—p. 951.
Respiratory Tract as a Portal of Entry in Infectious Diseases. I. W. Voorhees, New York—p. 956.
Malingering in Relation to War Neuropsychiatric Conditions, Especially Hysteria. J. F. W. Meagher, Brooklyn.—p. 963.
*Serum Treatment of Epidemic Poliomyelitis Occurring in Dubuque, Iowa, During Summer of 1918. J. J. Rowan, Jr., Dubuque, Ia.—p. 972.
Results of Focal Infections as Seen in Ophthalmology and Otolaryngology. B. D. Ravdin, Evansville, Ind.—p. 975.

Dec. 20, 1919, **96**, No. 25

Theory and Practice of Proteal Therapy. H. S. Williams, New York. —p. 997.
"Group" Medicine—The Medicine of the Future. J. R. Pennington, Chicago.—p. 1010.
Eye and Ear Symptoms in Basal Cranial Injuries. L. D. Brose, Evansville.—p. 1012.
Modern Treatment of Tuberculosis. R. C. Kirkwood, Albuquerque. —p. 1015.
Modern Urologic Advances and Their Effects on Renal Surgery. A. G. Rytina, Baltimore.—p. 1018.

Serum Treatment of Epidemic Poliomyelitis.—Among the eighty-five cases of epidemic poliomyelitis which occurred in Dubuque, ten patients died, a mortality of 12 per cent. Seventeen were not treated with Rosenow's serum; of these eight died, a mortality of 47 per cent. Sixty-eight patients were treated with the serum, and of these two died, a mortality of 3 per cent. In the two fatal cases conditions were such that curative effects of the serum could not be expected. The ages of the patients ranged from 2 weeks to 18 years. The average age of the untreated group was 4.8 years, and the average age of those treated was 4.7 years. The great majority of patients in each group were less than 6 years of age The disease was about evenly distributed between boys and girls. There was no lull in the epidemic between the treated and untreated groups. The crest of the wave of the epidemic occurred seven days after the serum treatment was begun. There was no difference in the severity of the early symptoms in the two groups of cases. The differences in mortality and incapacity would seem, therefore, in Rowan's opinion to be attributable to the good effects of the serum.

Military Surgeon, Washington, D. C.

December, 1919, **45**, No. 6

Early Experience in the War. J. A. Blake, U. S. Army.—p. 626.
Some Early Problems of Medical Department, A. E. F. S. H. Wadhams and A. D. Tuttle, U. S. Army.—p. 636.
Importance of Physical Therapy in Military and Civil Practice. W. S. Bainbridge, U. S. N. R. F.—p. 663.
Army Medical Museum. C. F. Craig, U. S. Army.—p. 679.
Varicocele as Applied to Men in Navy P. J. Reel, U. S. N. R. F. —p. 690.
Pathologic Service of the A. E. F. L. B. Wilson, Rochester, Minn. —p. 694.
Malingering. J. Catton, San Francisco.—p. 706.

Modern Hospital, Chicago

December, 1919, **13**, No. 6

How Cambridge City Hospital Overcame Financial Handicap. J. J. Weber, Chicago.—p. 452.
Some Small Communities and What Their Hospitals Mean to Them. M. K. Chapin, Chicago.—p. 455.
Public Hospital Planned to Minimize Depreciation. A. S. Kendall, Boston—p. 461.
Management of Contagious Disease Hospitals. D. L. Richardson, Providence.—p. 469.
Bringing the Christmas Spirit into the Hospital. H. A. Leonard, New York.—p. 473.
Beautiful Music Brightens Christmas in the Hospital. D. D. Lash. —p. 480.
Soldiers in French Hospital Celebrate Peace Christmas. M. J. Robinson, Dallas, Texas.—p. 491.

Northwest Medicine, Seattle, Wash.

December, 1919, **18**, No. 12

Standard British Method of Treating Fractures of Femur at Close of War. F. J. Fassett, Seattle.—p. 255.
Orthopedic Surgery in American and British Hospitals. D. K. Allen, Salt Lake City.—p. 258.
Surgical Injuries of Scalp, Skull and Brain. J. L. Stewart, Boise, Ida. —p. 260.
Injuries of Knee Joint. M. T. Smith, Wallace, Ida.—p. 263.
Pott's Fractures. J. W. Mowell, Olympia, Wash.—p. 265.
Industrial Injuries; Prevention of Loss and Restoration of Function. A. Gottlieb, San Francisco.—p. 267.
Osteomyelitis and Its Classification Roentgenographically. H. B. Thompson, Seattle.—p. 270.

Philippine Journal of Science, Manila

May, 1919, **14**, No. 5

*Bacteriologic Phases of Cholera Carrier Problem. J. A. Johnston, Manila.—p. 459.
Philippine Raw Materials for Glass Making. T. Dar Juan and V. Elicano, Manila.—p 465.
*Cystolithiasis Among Filipinos in Association with Dietetic Deficiency. R. G. Padua Manila.—p. 481.
Growth of Hevea Brasiliensis in Philippine Islands. H. S. Yates, Manila.—p. 501.
Biologic and Systematic Study of Philippine Plant Galls. L. B. Uichanco, Los Banos.—p. 527.

Cholera Carrier Problem.—The researches of Schöbl and of Panganiban on cholera carriers in guinea-pigs have shown that food plays an important rôle in the appearance and the disappearance of the vibrios in the feces. The normal period for recovery of the cholera vibrios from artificially infected guinea-pigs has been definitely established to be approximately fourteen days, after which time they can no longer be found. In Bilibid prison, the cholera carriers were given hexamethylenamin and, following Schöbl's experiments with ox bile in guinea-pigs, 0.65 c.c. of ox bile, three times a day, for two days; after an interval of five days the treatment was repeated. Those persons negative after the treatment were released from quarantine. Inspissated beef bile was used. It was not supposed that the bile would cure the carrier condition, but that it would cause more vibrios to enter the intestinal tract from the gallbladder.

Cystolithiasis with Dietetic Deficiency.—The results of Padua's investigation show that a relation apparently exists between the general dietetic inadequacy and deficiency among Filipinos and the incidence of phosphatic calculi, in contrast with the reported predominance of uric acid and urate calculi in Europe and in the United States. Of ten cases of cystolithiasis which he particularly studied since this investigation was undertaken, nine patients not only gave a history of having had beriberi, but exhibited actual signs referable to the disease. Although the clinical data of all but two of the other forty-eight cases are, as a whole, obscure with respect to the history of nutritional disease, still they indicate that the majority of the patients were undernourished and underdeveloped.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

December, 1919, **24**, No. 283

Special Tube Stand for Rapid Roentgen-Ray Stereoscopic Work. C. E. Holland.—p. 218.
*An Inherited Abnormality. C. F. Oddie.—p. 227.
*Unusual Fracture of Os Calcis. C. J. Glasson.—p. 228.
Detection of a Difficult Foreign Body. A. Marsh.—p. 229.
Simultaneous Fluoroscopy in Two Planes. H. C. Gage.—p. 230.

An Inherited Abnormality.—Oddie's patient, a boy aged 14 years, had one-jointed fingers on both hands. His mother had similar hands, and four of her nine children were similarly affected, the other five being normal.

Unusual Fracture of Os Calcis.—Glasson's patient had a fracture of the upper and posterior surface of the os calcis with displacement of the fragment, the forward end to the inner side. There was a transverse oblique fracture from the anterior portion to just in front of the posterior third of the upper surface, with dislocation forward of the lower segment. The tendo Achilles was not broken through, though some strands attached to the upper and posterior point of the os calcis were broken, lifting the fractured piece upward.

British Medical Journal, London

Dec. 6, 1919, **2**, No. 3075

Surgical Tradition. Historical Review. J. Tweedy.—p. 731.
Fracture Dislocations of Ankle. Pott's and Dupuytren's Fractures. R. P. Rowlands.—p. 735.
*Normal and Morbid Conditions of Testes from Birth to Old Age in One Hundred Asylum and Hospital Cases. F. W. Mott.—p. 737.
*Mumps in Adults. G. MacLeod.—p. 742.

Normal and Morbid Conditions of Testes.—Mott examined postmortem an emulsion of the brains of a successive series of 100 cases of general paralysis of the insane by dark-ground illumination, and found the spirochete present in 66 per cent. His assistant, Mr. Geary, examined by dark-

ground illumination the seminal fluid obtained postmortem from the vesiculae seminales of fifty cases of general paralysis, also an emulsion of the testicles; spirochetes were not once seen. This result, Mott says, indicated that the seminal fluid of a paralytic is, in all probability, noninfective at the time he is suffering with this disease. The family history of fifty-four male tabetic or taboparalytic patients showed that they had 151 children alive, seventy-five who were born alive but died in early infancy, and fifty-two born dead or miscarriages. This offered a striking contrast to the family history of twenty-five female tabetic or taboparalytic patients, ten of whom were sterile; the remaining fifteen had ten children alive, ten who were born alive but died in infancy, and fifty-one miscarriages or stillbirths. In the latter case both father and mother were syphilitic, and in the former the father in most instances married when the spirochete was no longer circulating in the lymph stream of the body, but was confined to the specially closed lymphatic system of the brain and spinal cord, the periadventitial sheath of the vessels and perioneuronal spaces which contain the cerebrospinal fluid. Mott also makes a detailed report of the results of the examination of the development of the testis from birth to puberty; normal spermatogenesis in cases of death from shock caused by severe injuries; the testes of a large number of general paralytics, of twenty-two cases of dementia praecox and of six cases of imbecility and idiocy.

Mumps in Adults.—Among the 694 cases of mumps in adults, analyzed by Macleod, orchitis has been the most frequent complication occurring in 140, or 20 per cent., of the cases. Relapses were met with in seventeen cases. All the above cases were in adult males from 18 to 40 years of age; seventeen were second attacks and one man claimed to have celebrated his third attack.

Dec. 20, 1919, **2**, No. 3077

Evolution of the Surgeon and His Training. W. T. Thomas.—p. 803.
*Chronic Intestinal Stasis in Children. G. Taunton.—p. 806.
Health Resorts for Diagnosis and Treatment of Chronic and Functional Diseases. E. P. Weber.—p. 809.
Tick Fever in Palestine. F. D. Nicholson.—p. 811
*Erythema Nodosum and Tuberculosis. E. Ward.—p. 811.

Chronic Intestinal Stasis in Children.—In discussing the treatment of this condition, Taunton says, that in children prevention should be the first aim. The maintenance of the correct posture comes before all else. Should there be at any time from any cause a tendency for the symmetrical posture of rest to be assumed it must be checked. Rest, physical exercises, tonics, change of air, must all have their appropriate use. When stasis already exists, and the symptoms of autointoxication are recognized, should careful examination point to a congenital cause, such as an appendical control, an operation is called for. There should be no delay; the earlier it is done the less will development be interfered with by the toxemia, the less risk will there be of an acute attack of appendicitis intervening prior to the operation, the more easy will it be to break the habit of absorbing poison which the bowel has acquired, and the fewer advantitious bands and membranes will have formed in conjunction with this form of control. In the acquired form operative interference should be avoided, if possible, but each case must be judged on its merits. Nasal obstruction must be dealt with, and a free airway established through the nose. Liquid petrolatum should be given before each meal to act as a lubricant and render the passage of the food more easy. Opening medicine, in the form of aperients, purgatives, cathartics, etc., should be avoided, except in the form of an occasional dose for some special reason. Agar-agar mixed with semisolid food is useful when the point of stasis originates at the sigmoid, and is most marked there. An abdominal support which keeps out of the pelvis the sagged portions of the bowel in which stasis exists is of the greatest use. An hour's rest in the recumbent position in the middle of the day will often help in a wonderful manner. Should these means fail or not suffice after due trial, operative measures will be necessary. However successfully the bowel has been freed from all controls, means must be taken to prevent the original cause or causes from becoming operative again. Attention must be paid to the nonoperative treatment where indicated, and always liquid petrolatum should be given for from six months to a year. Those portions of the bowel where stasis existed will tolerate delay from custom, and, having acquired the habit of absorption, both the custom and the habit have to be broken; in the same way, after the enucleation of tonsils and removal of adenoids, it is necessary to break the habit of mouth breathing, and unless that is done nasal breathing will not be resumed although the airway is patent.

Erythema Nodosum and Tuberculosis.—Although Ward does not suggest that tuberculosis is the only cause of erythema nodosum, he points out that a similar cutaneous manifestation may be due to many different poisons, one of which is that of tuberculosis. Moreover, the constitutional peculiarity which gives rise to this skin reaction seems to be inherited, as are other peculiarities—such, for instance, as the well known disposition to epidermolysis bullosa after slight injuries. Out of 4,000 cases of tuberculosis and contacts under annual observation, Ward has not yet noticed any other skin condition (apart from the well recognized tuberculides) which is definitely connected with tuberculosis. It has been stated that lupus erythematosus is attributable to tuberculosis, and Ward has seen a few cases of this disease, but not more than would be accounted for by coincidence; not more, for instance, than the cases of lichen ruber planus, which no one suggests is due to tuberculosis.

Dec. 27, 1919, **2**, No. 3078

Some War Diseases. H. Davy.—p. 837.
Mitral Stenosis in Soldiers. T. F. Cotton.—p. 840.
*Apparent Spontaneous Rupture of Normal Spleen. W. W. Shorten.—p. 844.
*Relation of Pfeiffer's Bacillus to Influenza. S. Wyard.—p. 845.
Pregnancy Complicated by Volvulus of Pelvic Colon. V. Bonney and E. C. Bridges.—p. 846.

Apparent Spontaneous Rupture of Spleen.—Shorten reports the case of a soldier, aged 43 years, who while walking was seized with pain in the region of the umbilicus, so severe that it caused him to fall to the ground. He vomited, and the pain subsided sufficiently to allow him to walk to his billet. He endeavored to carry on his duties, which were light, but the pain became worse. His medical officer came to the conclusion he had colic and gave him a dose of castor oil, which he immediately vomited. As the pain was getting steadily worse he was sent to the hospital. The diagnosis of rupture of an abdominal viscus was based on the marked abdominal tenderness and the boardlike rigidity of the abdominal muscles and free fluid in the abdominal cavity, but there were no localizing symptoms. The abdomen was opened in the middle line above the umbilicus; a large quanity of fluid and clotted blood escaped on opening the peritoneum. The liver was found normal, but on passing the hand into the splenic region a large quantity of clot was displaced and free bleeding was found to be going on. A large rupture in the spleen was felt. When the splenic vessels were grasped, the bleeding stopped. The splenic vessels were isolated and ligatured with linen thread and the spleen was removed. The wound was sutured with linen thread. The spleen was normal in size and weight; the tear, which extended from the convex surface to the hilum, divided the organ into two equal portions. There was no stripping of the capsule to suggest that at first there had been subcapsular hemorrhage, later tearing through the capsule. It was clear that the tear in the spleen and capsule were present from the first, allowing of free intra-abdominal hemorrhage. Microscopic examination showed the spleen to be normal. The patient recovered. Four weeks after the operation he was apparently in the best of health.

Relation of Pfeiffer's Bacillus to Influenza.—No agglutination of either one of three typical strains of Pfeiffer's bacillus was obtained by Wyard with serums removed from fifty-nine cases of influenza, whether those cases were or were not complicated by bronchopneumonia, and whether they

were in the first, second, third, fourth or fifth week of the disease. Attempts were made to discover antibodies by means of complement fixation tests, but in no case was the complement fixed.

Glasgow Medical Journal

December, 1919, **10**, No. 6

Sores, Analogous to Veld Sores and Barcoo Rot,' Appearing Among Soldiers Working in Blue Clay and In Chalk. D. D. Logan.—p. 257. To be continued.
With the 1/1st Lowland Field Ambulance in Gallipoli. G. H. Edington. —p. 262.

Lancet, London

Dec. 20, 1919, **2**, No. 5025

Evolution of Disease. W. A. Lane.—p. 1117.
Psychotherapy in Ordinary Practice. W. A. Potts.—p. 1123.
*Hysterical Sleeping Attacks. H. Carlill.—p. 1128.
*Occasional Manifestations of Malaria. D. W. C. Jones.—p. 1130.
*Treatment of Recurrent Malaria. H. Fraser.—p. 1134.
*Congenital Dislocation of Hip: Method of Dealing with Refractory Cases. A. H. Tubby.—p. 1135.

Hysterical Sleeping Attacks.—Carlill reports the case of a young man, aged 19 years, who, since early childhood, had been liable to go off to sleep at any time and without any feeling of fatigue. He had never been a week free from this. Except for enlargement of one of the turbinate bones, examination revealed no evidence of organic disease in any system. The boy's physical health was good. He was not addicted to bad habits. The Wassermann reaction was negative both in serum and in cerebrospinal fluid, and the fluid was in all other respects also perfectly normal. Carlill was confident that the attacks were hysterical, due to his own suggestion; in other words, the patient hypnotized himself. His head was roentgenographed and he was told that the real cause of his illness had been discovered, and that an operation for the removal of a piece of thickened bone was necessary in order to effect a complete and permanent cure. Carlill trephined the skull in the right parietal region and removed the disk of bone. The dura mater was healthy and was left alone. The bone was normal. Directly the patient regained consciousness, he was shown the piece of bone and given it to feel, and he was told how successful the operation had been. From the date of the operation his sleeping attacks ceased entirely and he admitted that he was absolutely cured. He did not relapse. The patient has remained perfectly well since his operation eighteen months ago.

Occasional Manifestation of Malaria.—Twenty cases are reported by Jones to demonstrate that malaria has a place, though a small one, among the hemorrhagic diseases. Instances are given of bleeding from the mucous membranes of the alimentary, respiratory and urinary tracts, into a solid organ like the spleen, and into the eye. Two cases of arthritis were observed in this series, one with effusion into a knee joint. Jones insists that hemorrhage of any kind occurring in a malarial subject should be regarded as an indication for treatment with quinin. Malarial subjects should be advised to take a calomel purge followed by quinin by the mouth immediately on feeling the slightest headache or malaise; by this method it appears that recurrences can frequently be aborted. To assist clinical diagnosis of the infection, the presence of areas of hyperalgesia over the distribution of the eighth cervical and first dorsal, the seventh dorsal and the lumbar segments, or some of these, may be taken as a good rough indication that the patient is suffering from malaria, provided that trench fever infection can be excluded.

Treatment of Recurrent Malaria.—Fraser claims that no man can have a relapse of malaria during the period that he swallows 15 grains of quinin sulphate in solution once daily. Smaller doses are not sufficient, and it is better to give the amount in one dose rather than in divided doses. Fifteen grains of quinin taken daily can do no harm to any man infected with malaria parasites. If a relapse occurs, the man is either not swallowing or not absorbing the quinin. It has not been determined how long the continuation of treatment is necessary. It was not found practicable to continue the treatment beyond twenty-eight days in hospitals or concentration camps for malaria. It is advisable to continue the treatment for as long as possible. In the absence of treatment or in cases inadequately treated relapses are observed. In these cases, 15 grains of quinin sulphate in solution should be given twice daily for five days and thereafter 15 grains once daily. The first dose should be given when the temperature is falling—that is, in the sweating stage. No patient suffering from a relapse without complications, who is treated in this way, will show a rise of temperature subsequent to the fourth day. No importance is attached by Fraser to the use of tonics, such as iron and arsenic.

Congenital Dislocation of Hip.—Tubby claims that in congenital dislocation of the hip the ilio-psoas muscles and tendons undergo important changes in direction. As the combined muscle tendon crosses the brim of the pelvis, it is displaced outward and it passes closely beneath the anterior inferior spine. It then winds outward and backward to its insertion, compressing the capsule about its middle, and this is responsible for the hour-glass shape of that structure, so often seen in cases of congenital dislocation in children more than 4 years of age. As age advances, the ilio-psoas muscle and tendon become more hypertrophied and thick; they compress the capsule of the hip-joint more closely about its middle, and the latter becomes not only hour-glass shaped, but its anterior wall is so folded inward and backward as to obscure the entrance to the acetabulum like a curtain. This constriction of the middle of the capsule is by no means an insuperable obstacle to reduction in early life. As time passes, however, the narrowing or hour-glass contraction of the capsule increases. By continuous narrowing, the aperture leading from the outer portion of the distended capsule into the true acetabular cavity may be reduced to a small button-hole. The cavity is thus obliterated, its site being covered over by the outspread attachments of the anterior layer of the capsular ligament. In these cases Tubby makes a crucial incision of the capsule and divides the contriction of the capsule and the ilio-psoas tendon. With a little traction on the limb, the caput femoris slips easily into its socket. The crucial incision into the capsule is then closed by suture, and the limb is put up in plaster in the fully abducted position. The result has been entirely successful. Tubby has been able to advance the age for operative reduction of the hip from 7 years onward, until the latest successful case occurred in a girl, aged 15 years.

Dec. 27, 1919, **2**, No. 5026

Mental Personality: Its Integration and Disintegration. H. Campbell. —p. 1181.
*Primary Hydatid Disease of Brain. N. B. B. Fleming and G. W. Bury.—p. 1186.
Epidemic Influenza in Australia. H. L. Kesteven.—p. 1189.
*Boiled Vegetables for Use of Diabetics. P. J. Cammidge.—p. 1192.
*Treatment of Tuberculous Abscess by Aspiration. Z. P. Fernandez. —p. 1193.
Removal of Large Cervical Tumors Occupying Vagina By Laparotomy. J. F. Peart.—p. 1194.
*Carcinoma of Ovary In a Girl Aged Nine Years. H. M. Gerson. —p. 1195.
Suppurating Hydatid Cyst of Liver. R. L. Ley.—p. 1195.

Primary Hydatid Disease of Brain.—Fleming and Bury make a detailed report of a case of this kind occurring in a soldier. A diagnosis of cerebral tumor was made. As the operation was about to commence, breathing ceased, but the pulse and all reflexes remaining normal, artificial respiration was resorted to, and a left subtemporal decompression was performed. The patient did not take a normal breath for four and one-half hours and without the administration of any anesthetic whatsoever. The condition of increased intracranial pressure had existed for a considerable time before the operation, and the anesthetic had further increased the pressure and so paralyzed the respiratory center beyond recovery. The patient died. At the necropsy, on slicing the left cerebral hemisphere, a unilocular cyst, equal in size to a large orange, escaped from the ventricle. The cyst had apparently no attachments to anything in the ventricle; the appearance of the cyst was typical of a hydatid. The cyst

was found to have bulged into and greatly distended the left ventricle, causing pressure on the surrounding parts, particularly the internal capsule, lenticular nucleus, and optic thalamus. It is the authors' opinion that the parasite had come via the choroid plexus. On dissecting the right hemisphere three calcified nodules one-sixth of an inch in diameter were found embedded in the middle frontal convolution. Nothing else abnormal could be found in the brain. The fluid in the cyst and the fluid obtained from aspirations of the left ventricle were found to contain hooklets and scolices, proving it to be due to *Tenia echinococcus*. The calcified nodules were examined, and a report of "amorphous calcified material" was returned. In spite of this, however, the authors submit that they were calcified nodules of *Tenia cysticercus*.

Boiled Vegetables for Diabetics.—Very little experimental work appears to have been done on the composition of the material resulting from the treatment of vegetables with three changes of boiling water. It has been generally assumed that any vegetable of low carbohydrate value is rendered practically carbohydrate-free, while vegetables of high carbohydrate content, and particularly root vegetables, should not be used. With a view to throwing some light on the question and discovering which are the best vegetables to employ for the purpose, a number of experiments were carried out by Cammidge. From these experiments it is clear that three boilings are not sufficient to render all vegetables carbohydrate-free, and that the amount of carbohydrate originally present is no guide in selecting those best suited for the preparation of a starch and sugar-free product such as may sometimes prove useful instead of actual fasting for children or persons who have severe cases of diabetes. It would seem that celery, rhubarb, spinach, sliced turnip and sliced carrot can probably be relied on and are the best to use for the purpose. Even when thrice boiled vegetables are not quite free from carbohydrate, the percentage is so much reduced that from four to thirty times as much of the thrice boiled as of the once boiled material will contain the same amount of carbohydrate.

Aspiration of Tuberculous Abscess.—Given an early diagnosis, Fernandez claims that treatment by aspiration will frequently arrest the course of a tuberculous abscess and effect a complete cure. Delay in diagnosis and treatment by incision not infrequently end in disaster.

Carcinoma of Ovary.—In the case cited by Gerson, an exploratory laparotomy had been performed, a provisional diagnosis of tuberculous peritonitis having been made. The right ovary and tube were found involved in a growth and were removed; no secondaries were observed at the time. Within a few weeks after operation a lump was noticed in the left iliac region, and on the presumption that the left ovary was involved, a second laparotomy was performed, which revealed a malignant growth of the left ovary and multiple secondaries in the omentum. The case was considered inoperable. The patient died two weeks later. Microscopically, a large papillary carcinoma, tubular and cystic, consisting of polygonal and cubical cells, was found in the left ovarian mass. Secondary carcinoma were found in the vagina and external os, the submucosa of the bladder, and the subserosa of the great omentum. A noteworthy fact was that no secondaries were found in the kidney on the right side, from which the corresponding ovary had been removed at the first operation.

Medical Journal of Australia, Sydney

Nov. 22, 1919, **2**, No. 21

Leukocytes in Trench Fever and Allied Obscure Pyrexias. W. K. Inglis.—p. 431. To be cont'd.
*Cases of Functional Disease of the Nervous System. A. C. Fraser.—p. 436.

Cases of Functional Disease of the Nervous System.—Fraser reports a case of hysterical contracture of the hand, one of psychasthenia, hysterical tremor and fits (shell shock), complicated by angioneurotic edema, and one of hysterical amblyopia. The patient made a complete recovery.

Nov. 29, 1919, **2**, No. 22

Rational Aspect of Cardiac Affections. S. Pern.—p. 453.
Leukocytes in Trench Fever and Allied Obscure Pyrexias. W. K. Inglis.—p. 454. Concluded.
Superacute Pulmonary Edema Complicating the First Stage of Labor. S. M. Verco.—p. 462.

Dec. 6, 1919, **2**, No. 23

*Digestive Disorders of Artificially Fed Infants. S. Harrison.—p. 475.
*Infant Mortality. W. F. Litchfield.—p. 479.
Food Factor in Gastro-Intestinal Diseases. R. D. Luker.—p. 481

Digestive Disorders of Artificially Fed Infants.—That every baby is a law unto himself in capacity, digestive power and assimilative process is a point emphasized by Harrison. Psychic and material individuality are as characteristic of infancy as of adult life. General guiding principles are essential, but no rigid hard and fast rules can be laid down to fit every case, for the baby is a living entity and not a machine with standardized parts. One must study, examine and handle each baby personally if success is to be attained.

Infant Mortality.—From a study of the infant mortality statistics of Australia and New South Wales, Litchfield concludes that during recent years there has been some agency in operation that has reduced very considerably infant mortalities. This has been widespread and uniform in its manifestation. Its influence has extended to the second, third and fourth years of life, and it has operated by diminishing the number of deaths from infective processes, especially those affecting the bowels and lungs in young children. It has been independent of public health measures and welfare schemes and there has been no great change in the habits of the people during the period of its occurrence. The only thing Litchfield can attribute it to is a widespread but obscure climatic effect.

Archives Médicales Belges, Brussels

August, 1919, **72**, No. 8

*Gases of Warfare. H. Fredericq.—p. 105.
*Sarcoma of the Stomach. H. Koettlitz.—p. 136.
Diaphragmatic Hernia; Two Cases. A. Colard.—p. 144.
*Clinical Examination in Diseases of the Nervous System. M. Molhant.—p. 149; Idem. R. Marchal.—p. 222.

Gases in Warfare.—Fredericq says that now that the censorship is a thing of the past, he is free to write a general review of this subject based on personal observation and experiences and those of others, as well as on the strictly censored literature. He remarks that the use of gases is not a new thing in warfare. "The Inquisition in striving to influence the heretics of Dauphiné used the gases from the combustion of green wood as a means of collective asphyxiation. In 1845 General Pellissier resorted to the same means in reducing the rebellious Arabs in Algeria, but he was denounced for this in the French legislature. The Japanese also used toxic gases, produced in a more scientific manner, in their campaign against the Russians in 1905." Fredericq says further that German documents which fell into the hands of the Allies showed that shifting of the wind, sweeping the gas back on them, did great damage to the Germans themselves in May, 1915, and on other occasions. The Germans did not have the advantage of the world weather reports, as the Allies' newspapers did not publish meteorologic reports during the war.

Sarcoma of the Stomach.—Koettlitz reports a case of gastric sarcoma with chylous ascites and involvement of the pancreas. He compares this case with the few on record; Gosset's compilation in 1912 included only 171. As metastasis is rare and as the sarcomas are often pedunculated, operative treatment offers considerable chances for a cure. His patient refused intervention for forty-five days after the tumor and achylia had been diagnosed, and the growth then was inoperable.

Disease of the Nervous System.—From the standpoint of the general practitioner, Molhant gives the pathogenic interpretation and diagnostic value of the clinical signs with disease of the nervous system. The clinical exploration in these cases differs so fundamentally from other clinical cases

that the physician often feels at a loss. This first instalment of his article is accompanied with thirty-three illustrations.

Marchal expatiates on the importance of an early diagnosis in these cases, so that the patient can be referred to a specialist in time for treatment to be effectual. He says that it does not take more than two minutes to test the pupil, tendon and skin reflexes and automatism when a patient complains of more or less vague pains and tendency to paresis of a member.

Bulletin de l'Académie de Médecine, Paris

Nov. 25, 1919, **82**, No. 37

The Milk Shortage in Paris. Pinard.—p. 359. See Paris Letter. —p. 118.
*Measurement of Speed of Heart Action. Lapicque.—p. 366.
*Malta Fever from Cheese. L. Bernard and H. Meunier.—p. 368.
*Resection for Gastric Ulcer. J. Abadie.—p. 370.
*Treatment of Hemophilia. P. Emile-Weil.—p. 374.

Measurement of Speed of the Heart Impulse.—Lapicque announces from his further study of chronaximetry that in the normal heart the functional velocity of the bundle of His is always in a given ratio to the functional velocities of the different cavities of the heart. The variations from this ratio offer a new mode of research on the heart in pathologic conditions, and to study the effects of drugs.

Malta Fever from Cheese.—The cheese made from goats' milk was the only possible source that could be discovered in the case of undulant fever in western France.

Gastrectomy for Ulcer.—Abadie declares that all the arguments against gastrectomy in opposition to palliative operations fall flat now that experience is confirming the comparative harmlessness of gastrectomy. It puts an end definitely and permanently to all disturbances from the stomach and menace of malignant disease later. There is no other field of surgery that is more useful from the practical standpoint as, other things being equal, it transforms a long suffering invalid into a normal, vigorous producer.

Serum Treatment of Hemophilia.—Emile-Weil reported in 1907 a very severe case of hemophilia since early childhood in a man of 26, much improved by injection of human or animal blood serum. These injections were kept up afterward for five years, 20 c.c. of serum every two months, and there have been no hemophilic hemorrhages since, the blood coagulating in a nearly normal manner. Six other patients have been treated by the same continuous method, and five have been freed from recurring hemarthroses, hematuria, etc., but the blood in none is quite normal. In the sixth patient the improvement was less and there have been some recurring hematomas. There never were any serious anaphylactic phenomena in any of the cases, but slight symptoms were sometimes apparent; in one not until after the sixteenth injection, and then none again. Others had them after the first injection and not afterward, slight joint trouble or urticaria, with fever, never anything serious.

Bulletin Médical, Paris

Dec. 20, 1919, **33**, No. 56

*Adjuvant Medication in Syphilis. F. Balzer.—p. 779.
Dangers of Criminal Abortion. P. Guéniot.—p. 782

Dec. 27, 1919, **33**, No. 57

Inaugural Lecture in Dermatology Course. L. M. Pautrier.—p. 801.
Nervous Symptoms from Retroparotid Space. F. Bonnet-Roy.—p. 807.

Adjuvant Medication in Syphilis.—Balzer urges the necessity for treating superposed infections, and fighting to ward off sclerosis, and to arrest incipient tabes and paretic dementia. Serotherapy might aid in overcoming the barriers which sclerosis interposes to protect the persisting foci of spirochetes. Attempts to strengthen the organism and reenforce the defences are also in order. Measures to stimulate leukocyte production, and organotherapy might be considered. Measures that have been found useful in the chronic pathologic conditions entailed by syphilis might prove far more effectual if used early, before these conditions had become so firmly entrenched. He thinks this adjuvant medication has been neglected too much to date.

Bulletin de la Société Médicale des Hôpitaux, Paris

Nov. 28, 1919, **43**, No. 34

*Tracheobronchial Glandular Disease. H. Méry.—p. 999.
*Diagnostic Sign of True Herpes Zoster. Sicard.—p. 1000.
*Syphilis and Tuberculosis. E. Marino (Buenos Aires), and M. J. C. Mussio-Fournier (Montevideo).—p. 1002.
*Determination of Blood Pressure. M. Villaret and Dufour.—p. 1006.
*Tuberculin Reaction in the Pregnant. Nobécourt and Paraf.—p. 1013.
Missing Xiphoid Appendix in Inherited Syphilis. Queyrat.—p. 1015.

Diagnosis of Tracheobronchial Glandular Disease.—Méry refers to some recent clinical experiences in which the radiologic and the necropsy findings were absolutely superposable. This comparing of the clinical and radiologic findings is one of the most instructive modes of research.

True Herpes Zoster.—By this term Sicard means the form that confers immunity and never recurs. He says that the aspect of the skin after the eruption has healed is characteristic, as definite and permanent minute scars are left on the patch of skin affected. This does not occur with the zosteriform type of herpes. This latter form is often the prelude to irritation of a spinal root from compression. Hence herpes zoster in adults should be regarded with suspicion until it has established its identity by the scars left.

Syphilis and Tuberculosis.—This communication from South America emphasizes the unsuspected frequency of inherited syphilis as a predisposing factor in the status lymphaticus, in asthenia and in more or less complex endocrine derangement. Even when no signs of inherited syphilis can be detected, tentative specific treatment is justified, and it may transform conditions previously refractory to all treatment. This is particularly indicated when the parents are robust and free from alcoholism, tuberculosis, malaria and lead poisoning, which might explain the degeneracy of their children. Tuberculosis so often develops on a basis of syphilis, that inherited syphilis should be suspected, particularly in the masked cases. Tentative specific treatment in addition to the usual treatment for the tuberculosis may induce such improvement that the organism then can throw off the tuberculosis.

The Blood Pressure.—Villaret and Dufour apply the Pachon oscillometer cuff to the upper arm, the Laubry sphygmophone to the bend of the elbow as usual, and palpate the radial pulse, all at the same time. They thus combine the oscillometer, auscultation and palpation methods, each acting as a control of the others, and the findings are recorded on a single chart. They describe a simple method for calculating a constant to express the coefficient of the different findings. It has confirmed the modifications in the normal blood pressure during digestion and in the erect position.

Loss of Immunity During Pregnancy.—Nobécourt and Paraf applied the tuberculin skin test weekly to 100 women during the last half of pregnancy and after delivery. This showed that pregnancy and parturition may induce an inability to react to the tuberculin test—a tuberculin anergy like that noted in certain infectious diseases, especially measles. This reduction in the sensitiveness to tuberculin usually corresponds to a parallel reduction in the immunity. This state of anergy—especially pronounced after childbirth—may explain the aggravation in tuberculous processes which is so apt to follow delivery.

Journal de Médecine de Bordeaux

Dec. 10, 1919, **90**, No. 23

*Substitute Action in Neurology. A. Pitres.—p. 511. To be cont'd.
With the French Surgical Ambulance in Russia. A. Baudrimont. —p. 522. Cont'n.

Replacement or Vicarious Action in Neurology.—Pitres analyzes the facts known to date in regard to substitute function in nerves after war wounds, and shows the errors which correct interpretation enables us to avoid.

Lyon Chirurgical

July-August, 1919, **16**, No. 4

*The Sequels of Sprains of the Knee. L. Tavernier.—p. 345.
Fistula into Bronchus from War Wound. J. L. Roux-Berger.—p. 364.
*Ossification in the Eye. L. Bussy.—p. 368.
*Old Cartilage Graft in Skull. A. Policard and J. Murard.—p. 378.

Sequels of Sprains of the Knee.—In this general review Tavernier discusses the various indications with the different sequels of a sprain of the knee. For dislocation of a meniscus, he opens the joint transversely, and sutures the lateral ligament with the knee half flexed, and immobilizes, and has had invariably good results, the patients able to run and jump. But there is a sideward movement when the knee is half flexed, not in other positions. Some do not notice it at all; those who do notice it may complain that the knee is weak. He shows that all the consequences of a sprain of the knee can now be effectually combated with some of the new or older operations. They have proved their harmlessness and efficacy in correcting the serious infirmity liable to be entailed by a sprain.

Ossification in the Eye.—Bussy discusses the mechanism of the bone formation sometimes observed in an atrophied eye or stump of an eye.

Fate of Cartilage Implant in the Skull.—At necropsy thirty months afterward, the cartilage implant was found fastened to the skull around with connective tissue, but there was no direct union between cartilage and bone. This fibrous soldering answered the purpose here, but it might not be strong enough to stand much movement of the parts. The perichondrium seems to protect the cartilage graft against being resorbed. In this case there had been very little resorption.

Lyon Médical

November, 1919, **128**, No. 11

Influenza and Tuberculosis. C. Roubier.—p. 531. Conc'n.
*Uterine Cancer. H. Violet.—p. 544.
Germany Since Its Defeat. B. Lyonnet.—p. 568. Conc'n.

Remote Results of Operations for Uterine Cancer.—Violet reviews the present status of 32 women from six to ten years after an operation for cancer of the uterus. Three of the women have been lost track of, but 9 are in good health to date; 10 succumbed to recurrence and 4 to postoperative peritonitis or hemorrhage. He says he does not know of an instance of uterine cancer treated with radium that has escaped recurrence for longer than three years. He would restrict radium to the inoperable cases, and to use supplementary to a radical operation, or in the attempt to render the cancer operable.

Paris Médical

Dec. 13, 1919, **9**, No. 50

*Depth in Radiology of the Heart. Vaquez and Bordet.—p. 465.
*Arsphenamin Jaundice. E. Chabrol and A. Khoury.—p. 467.
*Vitamins and Growth. Houlbert.—p. 473.
Seven Cases of Typhoid in One Family; No Water Contamination. Apert and Cambassédes.—p. 476.

The Depth Index in Radiology of the Heart.—Vaquez and Bordet report from study of 1,000 cases that when the depth index is normal, while the diameters of the heart are exaggerated, the right cavities are pathologically enlarged, as a rule. When the reverse occurs, that is, the index is exaggerated while the diameters are normal, the left ventricle is often pathologically enlarged in the depths. Or else the heart is displaced, which is easily determined. The depth index is the difference between the profile of the apex as marked on the screen directly and then again after the tube has been moved 10 cm. to the left. With a distance of 60 cm. from the focus to the screen, the normal difference between the two profiles, the subject standing, is from 7 to 14 mm. The expansion of the chest does not modify the findings. The findings with this index always corresponded to the clinical findings in the case.

Arsphenamin Jaundice.—Chabrol and Khoury present an array of clinical data and emphasize the importance of a predisposition on the part of the liver as a factor in the toxic jaundice from arsphenamin. Several of their cases show the extra vulnerability of the liver from a pregnancy, tendency to gallstones, and hereditary cholemia. Antecedents of this kind call for special caution in administering a drug with a reputation for inducing jaundice. One of the longest and best known types of hemolytic jaundice is that induced by arseniuretted hydrogen. How else except by toxic action can we explain the jaundice which develops in 20-year old syphilis after a course of ten or twelve injections of arsphenamin?

Vitamins and Growth.—Houlbert has been studying the action of vitamins on the division and multiplication of cells. Two of three chickens of the same hatching were fed on polished rice, wheat and barley, all sterilized, and twice a week a little cod liver oil was given them to ward off polyneuritis. Cell division was found completely arrested in the sexual and hematopoietic glands examined in one chicken at the fortieth day. The other was then kept on the same diet, but a few drops of a vitamin were added to the feed, and the chicken began to thrive at once. When killed the thirty-second day it was evident that the endocrine glands had pursued their normal evolution after the primary arrest of the forty days of the deficiency diet.

Presse Médicale, Paris

Dec. 17, 1919, **27**, No. 77

*Prophylaxis of Tuberculosis. A. Calmette.—p. 773.
*Spirochetal Bronchitis. Najib Farah.—p. 774.

Prophylaxis of Tuberculosis.—Calmette insists on the importance of some of the more recent acquisitions in our knowledge of tuberculosis, such as that the tuberculous with occult or latent lesions may suddenly begin to eliminate tubercle bacilli in their glandular excretions or their dejecta. This intermittent elimination by these occult carriers is very common, but is seldom recognized. He reiterates further that no person and no animal contracts tuberculosis, no matter how unhygienic the environment, unless virulent tubercle bacilli have been brought into this environment by some human or animal continuous or intermittent spreader of these bacteria. All our efforts therefore should be predominantly directed to ward off this importation of the bacilli, especially frequent importations and on an extensive scale. Every one who reacts to the tuberculin test—even though apparently entirely healthy—is an intermittent spreader of germs, the more dangerous because unsuspected. They are the ones who disseminate contagion even in the remotest regions of the world. It will always be difficult to discover these intermittent sowers of bacilli, either human or bovine. But every person or animal reacting positively to the tuberculin test should be regarded with suspicion, and young children and young domestic animals in localities still free from infection should be guarded against them, and against contamination of milk and food, by hands, towels, flies and street and other dust. The reservoirs of virus in open tuberculous cases in man and animals are the source of the massive and frequent contaminations which entail phthisis even in adults. To guard their environment against them requires insight and science on the part of physicians and veterinarians, and training in hygiene for all interested, either because they have to live with the sick or fear loss of their herd.

Spirochete Bronchitis.—Farah reports gratifying results in ten cases of Castellani's spirochetosis in which intramuscular injections were given of iodin in an oil vehicle. There has been no relapse in any of the cases since May, 1918. From five to ten daily injections were given, followed by another series at two or three days' interval. By the fifth injection there were scarcely any spirochetes to be found. One of the patients had had the spirochetosis for eight years. No other member of the family had contracted the disease in any instance, confirming the slight contagiousness. The same treatment apparently proved equally effectual in his two cases of monilia bronchitis.

Revue de Chirurgie, Paris

May-June, 1919, **38**, No. 5-6

*Toxicity of Crushed Muscle. P. Delbet and others.—p. 309.
*Varicocele. O. Jacob.—p. 352.
*Sporotrichosis from Surgical Standpoint. P. Moure.—p. 366.

Toxicity of Crushed Muscle Tissue.—Delbet and his four co-workers injected 213 normal animals with crushed tissues, macerated and filtered, taken from 121 other animals. This extensive research on 114 rats, sixteen dogs, sixty-eight guinea-pigs, thirteen frogs, one cat and one rabbit has con-

firmed the assumption that crushed and devitalized tissues generate the toxins which bring on shock. In war wounds and in peace crushing injuries the main thing is to clear out all the devitalized tissues before they get the chance to poison the whole system. Some of the animals displayed remarkable resistance to the injections while others succumbed at once. Those that succumbed, he noticed, were the carnivorous animals while the herbivorous guinea-pigs and rabbits were the most resistant. He accepts this as a hint to drop meat from the diet but otherwise feed patients abundantly before and after operations, mostly with vegetables. Soldiers who had been eating much meat seemed to develop traumatic shock more readily than others, while those from rural districts, accustomed to a more vegetarian diet, seemed more resistant to traumatic shock.

Operative Treatment of Varicocele.—Jacob has had no recurrence in the 237 cases of varicocele in which he resected from 6 to 8 or 15 cm. of the anterior spermatic veins, close to the inguinal canal. The peripheral stumps were then tied together and drawn up by the ends of the ligature into the superficial inguinal ring where they were fastened to the pillars of the ring.

Surgical Importance of Sporotrichosis.—Moure emphasizes that sporotrichosis does not require surgical treatment, but that its localizations and clinical symptoms are liable to deceptively simulate other pathologic conditions for which operative measures would be imperative. He declares that the textbooks on pathology should devote some space to this mycosis as well as to syphilis and tuberculosis, to avert blunders from its nonrecognition. It should be looked for in all subacute and chronic suppurations, to prevent needless and often harmful operations. If not convenient to make cultures or test for agglutination, nothing is easier than to give a tentative course of iodid treatment. Under this, sometimes, old suppurations which have resisted all surgical interventions may melt away as if by magic. He advises testing the tolerance, as about 10 per cent. of patients are more or less intolerant of iodids. He gives a daily dose of 2 gm., gradually increasing to 4, 6, 8 and 10 gm. The useful dose is from 4 to 6 gm., and potassium iodid, sodium iodid and iron iodid might be associated, adding the syrup of bitter orange peel, and supervising the antisepsis of the bowel. The dose should be fractioned and taken with meals, and the treatment kept up for at least a month after the apparently complete cure of all the lesions. If surgical measures are required for osteitis with sequesters, it is better to defer them till after the iodid has been taken for some time.

Revue Médicale de la Suisse Romande, Geneva

October, 1919, **39**, No. 10

Influenza in 1918. C. Krafft.—p. 465.
*Simplified Serologic Test. J. Golay.—p. 493.

Simplified Serologic Test.—Golay's technic differs from Noguchi's in a number of minor points which, he says, increase its precision while materially simplifying the technic, as he describes. In 150 persons tested, the reaction was positive in 100 per cent. of the syphilitics and was negative in 100 per cent. of the nonsyphilitics.

November, 1919, **39**, No. 11

*Actinomycosis of the Brain. N. Sagredo.—p. 505. Begun in No. 10, p. 478.
Influenza at Children's Clinic, Geneva. Reh and Schiff.—p. 517.

Actinomycosis of the Brain.—Sagredo reports two cases of metastasis in the brain from actinomycosis in lungs and pleura, and compares with them twenty cases he has compiled from the literature. The lesion is generally an abscess, but it may develop as a tumor or it may induce merely meningitis. The pus with actinomycosis is peculiarly thick and is liable to form false membranes, like those of membranous croup, as occurred in the ventricles in one of his cases.

Gazzetta degli Ospedali e delle Cliniche, Milan

Nov. 16, 1919, **40**, No. 92

*Effect of Occlusion of Pancreatic Duct. E. Bernucci.—p. 996.

Nov. 20, 1919, **40**, No. 93

Poisonous Mushrooms. G. Ferri.—p. 1013.

Effect on Peristalsis of Occlusion of Pancreatic Duct.—Bernucci gives twelve sets of radiograms showing the progress of the food in stomach and bowel after the pancreatic duct had been ligated or had become obstructed from other cause. The experiments were made on dogs. The effect was most marked on the progress of fat foods, less marked with protein foods, and scarcely any effect was seen on carbohydrates. These effects are analogous to those from ligation of the common bile duct, but they are not so pronounced as with the latter. With obstruction of the pancreatic duct, the stomach is the segment of the digestive tract that feels the retarding effect most.

Policlinico, Rome

Nov. 23, 1919, **26**, No. 47

*Vitamins in Urine. G. Gaglio.—p. 1381.
Acetonemia in Children. E. Modigliani.—p. 1382. Conc'n.
Red Cross Welfare Work for the Tuberculous. C. Baduel.—p. 1395.
*Treatment of Purulent Pleurisy. E. Pittarelli.—p. 1396.

Vitamins in Urine.—Gaglio writes from the Pharmacology Institute of the University of Rome to confirm his previous announcements (May 25, 1919) that pigeons with pronounced polyneuritis from being fed with polished rice recovered from the otherwise fatal polyneuritis when they were treated with human urine, two or three times a day in doses of 3 or 4 c.c. of the urine, slightly condensed in the water bath. "The effect was more decisive," he adds, "than Funk realized with extract of rice hulls, which resulted in his assumption of the hypothetical vitamins."

Aspiration of Pus from the Pleura.—Pittarelli gives an illustrated description of his aspirator which, automatically and simultaneously presses and aspirates, so that the pressure inside the pleura is not modified in the least, the whole proceeding independently of the intrathoracic pressure. The double-ended syringe has a tube and needle at each end. The two plungers are worked simultaneously by a thumbscrew in the center. One thus aspirates while the other forces in air or fluid. A disinfecting fluid can thus be sent through the pleura until it comes away clear. The only inconvenience is the necessity for introducing the two needles.

Nov. 30, 1919, **26**, No. 48

*To Reveal Latent Malaria. A. Dazzi.—p. 1413; Idem. T. Silvestri.—p. 1418.
*Serous Traumatic Peritonitis. G. Aboularage.—p. 1427.
Metal Stand for Needle for Intravenous Injection. A. Cerioli. p. 1429.

Means to Reveal Latent Malaria.—Dazzi reports trials of various means that have been proposed to induce a malarial paroxysm in suspects, and states that a subcutaneous injection of 1 mg. of suprarenal extract best answers the purpose. No quinin was allowed for five days before, and the blood was examined before, twenty and sixty minutes afterward, and the next day. It does not induce a malarial attack, but it drives out the parasites into the blood at once and up to an hour, but by the next day none may be found. The epinephrin induces also a marked reduction in the size of the spleen, commencing at once and continuing for several hours.

Silvestri prefers strychnin for the purpose; from 1 to 3 mg. by the mouth daily. The simplicity and efficacy of this provocative measure commend it, he declares, the febrile attack developing not later than the third or fourth day.

Traumatic Serous Peritonitis.—The circumscribed peritonitis followed a contusion and the abdomen had to be tapped several times, the child dying of cachexia in a month, although the viscera seemed normal.

Rivista Critica di Clinica Medica, Florence

Oct. 18, 1919, **20**, No. 42

*Progress in Organic Nervous Disease. F. Schupfer.—p. 493. Conc'n.

Recent Progress in Organic Disease of Central Nervous System.—Schupfer states that no light has been thrown on the pathology of the frontal lobes nor on aphasia, apraxia and epilepsy by the war experiences, but the war wounds of the cerebellum have confirmed the latest acquisitions of science, especially in regard to centers in the cerebellum

controlling the action of both the acting and the antagonist muscles. It was learned further that wounds of the spine were not so grave in the cervical region as lower down. If eschars, infection of the bladder and pleuropulmonary complications can be warded off, there may even be notable improvement. The difference in the gravity of the lesion as it is high or low is explained by the wider space for the cord in the spinal canal in the cervical region.

Archivos Españoles de Pediatría, Madrid

October, 1919, **3**, No. 10

*Malta Fever in Children. J. Aguilar Jordán.—p. 577.
*Calcium Balance in Children. C. S. de Los Terreros.—p. 595.
Scrap of Bone in Rhinopharynx. A. Martin Calderin.—p. 606.

Malta Fever in Children.—Aguilar Jordán reiterates that no drugs have proved effectual in treatment of Malta fever. Vaccines and antiserums seem to offer promise of better results, although in his own experience they have proved disappointing. He has been quite successful with antityphoid autovaccine therapy in children, since 1913, and thinks that improved technic will aid in vaccine treatment of Malta fever. The experiences with it in Italy lately by Caronia and others have been most satisfactory, as duly reported in these columns.

Calcium Balance in Children.—De los Terreros explains that calcium and its compounds have a much wider sphere of action in children than has been suspected till recently, not only in rachitis and tuberculosis, but in spasmophilia, epilepsy, true hypotrophy, neoplasms, etc. The loss of calcium balance is comparatively common in children. It should be suspected in any one of the above conditions, and be investigated by analysis of the urine and stools, study of endocrine disturbances, the blood count, chemical analysis of the blood, and radiography of the bones.

Crónica Médico-Quirúrgica, Havana

October, 1919, **45**, No. 10

Reminiscences of Youth. J. Santos Fernández.—p. 277.
*The Reflexes During Sleep. J. de Jesús González.—p. 285.

The Reflexes During Sleep.—González in long series of tests on children of different ages found the skin, tendon and sensory reflexes abolished during sleep. Even the reflexes peculiar to sleep disappeared likewise when the slumber grew more profound.

Medicina Ibera, Madrid

Nov. 22, 1919, **9**, No. 107

*Cholesterol as Factor in Immunity and in Production of Agglutinins. T. Morató and G. Villanueva.—p. 137. Conc'n.
*Treatment of Spindle-Cell Osteosarcoma. C. Calderón.—p. 139.
Useful and Harmful Coughs. G. Triviño.—p. 140.

Cholesterol and Immunity.—Morató and Villanueva found that cholesterol mixed with typhoid vaccine and injected into eighteen rabbits seemed to hasten and enhance the production both of antibodies and of agglutinins. The addition of the cholesterol also seemed to reduce the general reaction to the antityphoid vaccine. They also cite further some recent research by others testifying to the benefit from administration of cholesterol in toxi-infections in which the cholesterol content of the blood is below the normal figure. Among others mentioned is Iscovesco's favorable experiences in tuberculosis, Revillet's in exophthalmic goiter, and Monziol and Castel's in malaria. The latter declare that cholesterol tends to render the cells more susceptible to the action of quinin.

Treatment of Sarcoma.—Calderón advised disarticulation of the hip joint in the case of a youth with a spindle-cell osteosarcoma on the leg. The parents refused to consent to such a mutilating operation for "merely a little bunch on the leg," and they asked to have the bunch cut out and the bone scraped. He refused to do this, confident that it would merely whip up the malignant disease. The parents found another surgeon more complaisant, but the curetting hastened the course and death speedily followed. He urges others to resign a case rather than do such unscientific and injurious operations as curetting in these circumstances.

Memorias do Instituto Oswaldo Cruz, Rio de Janeiro

1918, **10**, No. 2

*Entameba Found in Snake. A. Marques Da Cunha and O. Da Fonseca.—p. 95.
Microscopic Floating Life of Sea Coast of Brazil. Idem.—p. 99.
*Scientific Trip down Paraná River. A. Lutz H. C. de Sóuza Araujo and O. da Fonseca, Jr.—p. 104.
*Experimental Research on Influenza. A. Marques Da Cunha, O. de Magalhães and O. da Fonseca.—p. 174.
Brazilian Protozoa. A. Marques da Cunha.—p. 192.
Flagellate Parasites in Frogs. C. Ferreira Pinto.—p. 194.
Brazilian Oestridae. A. Lutz.—p. 118 (of Part 2).

The "Memorias."—The last half of this 167-page issue contains full translations of the articles in the first half. All the translations are in English except two in French. There are fifty-seven pages of fine plates accompanying the article on the entameba and the report of the scientific mission to study the mosquitoes and pathology of the Paraná district.

Experimental Influenza.—The experiments on monkeys, guinea-pigs and other animals at the institute confirmed that the filtered virus was able to induce influenza in animals. The intense and prolonged rise in temperature after the inoculation is accepted as the criterion of the reaction to inoculation of the animals with blood and filtered sputum from influenza patients. The period of incubation, the immunity conferred by the first inoculation, and the absence of any reaction when the filtrate had been heated or treated with phenol, testified that the hyperthermia was the work of a living agent and not a toxic fever. Virulent filtrates heated and phenolized seemed to display a curative action. Autohemotherapy is often effectual, which testifies further to the presence of the virus in the blood, as also the precipitation reaction between the sputum filtrate and convalescents' serum. There is no fixation reaction between human serum and the filtrate of the influenza sputum.

Observador Médico, Mexico

Nov. 15, 1919, **1**, No. 5

Autogenous Vaccine Therapy. T. G. Perrin.—p. 91. Conc'n.
*The Abderhalden Test for Cancer. F. Solorzano A.—p. 100.

The Abderhalden Test for Cancer.—Solorzano applied Abderhalden's technic to the urine in eleven cases of cancer, and obtained a positive response in seven.

Plus-Ultra, Madrid

August, 1919, **3**, No. 14

*Abnormal Metabolism of Nucleins as Cause of Gouty Diathesis and Diabetes. Obdulio Fernández.—p. 65.
Recent Progress in Blood Diseases.—p. 68; in Obstetrics and Gynecology.—p. 72; in Ophthalmology.—p. 89; in Therapeutics.—p. 93; in Instruments, etc.—p. 97; in Venereology.—p. 106; in Heart Disease.—p. 116.
Vaccine to Ward off Complications of Influenza. A. Salvat.—p. 69.
*Thyroid Deficiency. J. Collar y Jiménez.—p. 77.
*Lumbar Fistulas of Renal Origin. M. Serés.—p. 80.
*The Factors in Hydromineral Treatment. Rodriguez Pinilla.—p. 90.
*Influence of Uranium on the Blood. F. Más Magro.—p. 110.

The Nucleins in Pathogenesis of Gout and Diabetes.—Fernández presents arguments in favor of the assumption that both arthritism and diabetes are the result of defective metabolism of nucleins or of their immediate derivatives.

Thyroid Deficiency.—Collar gives the history of two children with congenital myxedema, the photographs showing the great improvement realized under a year of thyroid treatment begun at the ages of 4 and 11. The thyroid extract was taken regularly two or four times a day. The treatment was not begun till 18 in another case in which the symptoms of thyroid insufficiency had developed at the age of 10. Under fifteen months of thyroid treatment the girl grew taller, and the breasts and genital organs developed; menstruation became regular and free from headache. Among the symptoms were albuminuria and tendency to somnolency and chilliness, and she never perspired even during the summer. Slight or partial insufficiency of the thyroid is hard to differentiate, as it appears under so many different aspects, especially a tendency to obesity, to transient edema not located by gravity, appearing in the arms, hands and legs and in the lower lids, especially in the morning. The voice also may be weak, from infiltration of the

vocal cords. The tendency to somnolency and to chilliness is also a prominent symptom, and there are often vasomotor disturbances, numbness in the fingers, etc. The hairs in the outer half of the eyebrow may drop out, and there is usually constipation and headache in connection with menstruation, and neuralgia is common. There is very little perspiring, except possibly in the hands; the sweat here contrasts with the cold clamminess.

Fistulas Into the Kidney.—Serés has operated in three cases for renal fistulas in the lumbar region, and describes the etiology, complications, and preferable operative technic for such lesions from suppuration or calculi in the kidney. Functional tests of the kidney showing normal conditions demonstrate an extrarenal origin for the fistula; they are indispensable in any event as they reveal whether the kidney is worth saving or not.

Crenotherapy.—This classic term for treatment by water from mineral springs deserves more general adoption, although the term "spa treatment" includes much more than the waters. The repose, change of scene and diet are important adjuvant factors, Rodríguez emphasizes. He adds that crenotherapy cannot be classed as physiotherapy, like sunlight, heat, electricity and exercise. Although the waters are a natural agent given by Nature, yet their action is physicochemical, not physical alone, and each spring is an individual, a living thing, as is evident by the loss in its potency when carried away from its source. The mineral water acts more like a ferment; comparatively small amounts accomplish great transformation, while physical agents act proportionately to their quantity.

Influence of Uranium on the Blood.—Más Magro reports the results of extensive experimental research on the action of uranium on the blood-producing organs. A subcutaneous or intraperitoneal injection of a 2 per cent. solution of uranium acetate in rabbits and guinea-pigs caused an epithelial nephritis with death the sixth or seventh day. This is the effect of the minimal lethal dose. When death occurs in three hours and a half, the blood shows coagulation, thrombosis, precipitation and agglutination. Uranium thus does not induce death directly.

Progresos de la Clínica, Madrid

September, 1919, **7**, No. 81

*Operations for Pulmonary Tuberculosis. L. Morales.—p. 97. Conc'n.
*Chemical Analysis of the Blood. F. Poyales.—p. 108. Conc'n.
*Nutritional Derangement and Rachitis. P. Pereda y Elordi.—p. 117.
Peripheral Facial Diplegia from Influenza. W. López Albo.—p. 141.

Operative Treatment of Pulmonary Tuberculosis.—Morales concludes from his review of the various surgical measures that have been applied in pulmonary tuberculosis, that there is every reason to call in the surgeon where the disease is progressing in spite of well-planned and systematic medical treatment. No attempt should be made to resect the lung itself or open a cavity, as these interventions are extremely grave under these circumstances and the result doubtful; at most, a very large cavity might be opened up under very special circumstances. Procedures to ensure the collapse of the lung favor the natural healing processes, and among them paravertebral thoracoplastics gives fine clinical results, but phrenicotomy, he affirms, is the simplest measure and has good effects to its credit. It is indispensable, he reiterates, that the disease must be confined to one lung. He describes the technic for phrenicotomy, saying that it is harmless, never causing disturbance in the respiration or heart functioning nor dyspnea. Under local anesthesia, through an incision 10 cm. long at the outer margin of the sternocleido muscle, the phrenic nerve is exposed and severed.

Practical Analysis of the Blood.—Poyales describes various simplified procedures for chemical analysis of the blood, all within the reach of the general practitioner. His numerous references are all to American works.

Nutritional Disturbances and Rachitis.—Pereda's profusely illustrated account of his experience with debility and rachitis in children teaches anew that the osteoporosis which follows deprival of calcium in the food is not rachitis, and never runs into rachitis, so long as there is not chronic intoxication of digestive origin. When this autointoxication is corrected, then conditions right themselves, if this occurs in time to ward off irreparable lesions. The whole cause of true rachitis he traces to defective digestion of fats, aided perhaps by a relative congenital intolerance. Treatment should not include calcium, as there is enough in ordinary food for the infant's requirements.

Repertorio de Medicina y Cirugía, Bogota

November, 1919, **11**, No. 2

*Shock after Delivery. N. Buendía.—p. 57.
*Case of Pseudohermaphrodism. Martín Méndez S.—p. 68.
Criminal Responsibility of the Insane. A. Gaitán U.—p. 72. Conc'n.

Shock After Delivery.—Buendía refers to a set of symptoms after abortion and normal delivery which seem to form a state of shock, although the loss of blood was not excessive and no operative measures had been attempted. It seems to be more frequent in tropical than in temperate climes, and in women who have borne a number of children; those inclined to neuropathies are predominantly affected. He describes six cases of this "essential postpartum shock," with its profound depression of the circulation and respiration, and partial or total loss of consciousness and sensibility. Hypodermic injection of epinephrin proves so effectual that it throws light on the etiology.

Pseudohermaphrodite. — Méndez gives an illustrated description of another instance of blunder in sex, the androgynoid being unmistakably of male sex, although baptized and brought up as a girl.

Revista Médica de Chile, Santiago

November, 1919, **47**, No. 11

*Anomalies in Bile Ducts. J. Alvarado.—p. 813.
Syphilitic Disease of Orbit and Skull. C. Charlín C.—p. 816. Cont'n.
*Congenital Luxation of Hip Joint. E. Díaz Lira.—p. 840. Conc'n.
*Puzzling Case of Ovarian Cyst. G. Lachaise.—p. 853.
*Italian Method in Treating Ectropion. Italo Martini.—p. 855.
Vagotony in Syphilitics. Prado Tagle and C. Garcés.—p. 860.
*Typhus. A. Atria.—p. 867. Conc'n.

Anomalies in Course of Bile Ducts.—Alvarado describes two cases in which the cystic duct lay behind the hepatic and parallel to it, and emptied into it from the rear.

Congenital Luxation of Hip Joint.—Díaz reviews the present status of treatment of this condition in Chile and especially in the children's hospital at Santiago, studying in particular the causes of failures. Perseverance and patience are needed here more than anywhere else, he remarks, quoting in conclusion Amunátegui's saying that orthopedics is the most ungrateful of specialties, as it takes so extremely long to get results.

Puzzling Ovarian Cyst.—Lachaise diagnosed an extrauterine pregnancy from the fluctuating tumor reaching above the umbilicus and not changing its position, while he could palpate the fetal head. Laparotomy showed a large ovarian cyst, fastened by adhesions, and a myoma which had been mistaken for the fetal head. There was no sign of pregnancy.

Treatment of Ectropion.—Martini had always been disappointed with the results of plastic operations on the eyelids until he applied the Italian method of a pedunculated flap. In a case reported the woman never complained of disturbances in the arm, while the outcome was highly satisfactory.

Typhus Fever.—Atria is chief of the bacteriology section of the Public Health Service, and he closes his report on the recent typhus epidemic by reiterating that the diagnosis of typhus must be based on the clinical picture, the negative findings with tests for typhoid, and the character of the epidemic. The Nicolle biologic reaction is useful only in experimental research and not for the clinical diagnosis.

Revista de Medicina y Cirugía, Havana

Oct 25, 1919, **24**, No. 20

*Edema of Larynx as Complication. D. Hernando Seguí.—p. 495.

Edema of Larynx as Complication.—Seguí discusses the possible primary causes of edema of the larynx, from syphi-

lis, drinking scalding fluids, trauma, such as a kick in the neck in football, kidney disease, neurotic edema or laryngeal urticaria, and iodid edema. The latter is more common than generally recognized, and is liable to cause fatal asphyxia if potassium iodid is given when the lumen of the larynx is already somewhat obstructed by pathologic infiltration. He warns expressly against iodid when there is the least tendency to edema. Whatever the cause, treatment should be with absolute repose, opium and bromid to quiet the cough, very cold or very hot applications around the neck, and spraying the larynx with a suprarenal-cocain solution, preparing for the tracheotomy which may become necessary. He advises the intercrico-thyroid operation as easy, rapid and harmless; only in case of chronic disease, with secondary edema, the tracheotomy had better be lower. Angioneurotic edema calls for rapid derivative measures and disinfection of the bowel; edema with chronic nephritis indicates a purge, theobromin, and suppression of salt in the food.

Nov. 10, 1919, **24**, No. 21

*Cough from Reflex from the Ear. G. M. Landa.—p. 528.
Sterilization According to the Pharmacopeia. H. González Arrieta. —p. 530.

Reflex Cough from Impacted Cerumen.—Landa was unable to find any cause for the spasmodic cough in the young child except signs of eczema and excess of wax in one ear. There was no further coughing after the ear had been cleared out. The cough resembled whooping-cough, but it occurred only during the daytime. The nerve connection readily explains the irritation of the external laryngeal nerve from pressure by cerumen on nerve fibers in the ear.

Semana Médica, Buenos Aires

Oct. 9, 1919, **26**, No. 41

*Brain Complications of Otorrhea. B. S. González.—p. 407.
Dyspnea with Heart Disease. L. J. Facio.—p. 419
*The National Tuberculosis Sanatorium. E. R. Coni.—p. 421.
Diluted Vaccine Therapy of Typhoid. P. H. Dedomenici.—p. 433.

Complications of Otitis.—González emphasizes the necessity for referring a patient with otorrhea to a specialist without wasting time on ordinary measures, relating a case in which the practitioner tried various measures for over two weeks before sending the patient to the ear surgeon. By that time the cerebral abscess had reached an inoperable stage. Sixteen illustrations are given of the necropsy findings in the brain. The anatomic specimens in this case, the brain, meninges and temporal bone, form an object lesson on the danger of delay in cases of otorrhea. The set is to be kept together in the museum, so that it can be studied in preparing monographs on pathologic conditions in this region.

The National Sanatorium at Cordoba.—Coni took charge of this sanatorium in June, and this is his formal detailed report of its condition and of his work there during his less than three months' incumbency. His resignation accompanies the report; the deficiencies and disorganization discouraged him too much to continue his work there.

Oct. 16, 1919, **26**, No. 42

Military Anthropology. J. W. Howard.—p. 449.
Chronic Hemorrhagic Nephritis. H. L. Carcetti.—p. 453
*The Symbiotes. J. P. Garrahan.—p. 462.
Functional Reactions of the Aconitins. J. A. Sánchez.—p. 468.
Sanatoriums for the Tuberculous in Argentina. E. R. Coni.—p. 472.
Tuberculosis in Mountainous District. J. F. Mieres.—p. 473.

The Symbiotes.—Garrahan describes with much detail Portier's theory of the symbiotes, the reunion of symbiotic micro-organisms in the mitochondria apparatus in the cell. Portier declares, "Le symbiote est l'organe de la synthèse."

Siglo Médico, Madrid

Nov. 15, 1919, **66**, No. 3440

The New Tubes for Roentgen Work. B. Navarro Cánovas.—p. 977.
Repression of Mendicancy. G. Marañón.—p. 980.

Nov. 22, 1919, **66**, No. 3441

*Serotherapy of Anthrax. F. Murillo.—p. 1001.
*Transformation of Sanatoriums into Villages. J. Sixto.—p. 1004.
Diagnostic Tests for Syphilis. D. T. Morató Cárdenas.—p. 1005.

Serotherapy of Anthrax.—Murillo comments on the "extraordinary frequency of anthrax in Spain, and the fact that it is so seldom fatal, notwithstanding the gravity of the lesion." He estimates that there must be from 2,000 to 3,000 cases in Spain every year. It has been given as the cause of death in from 0.56 to 1.09 per thousand of the total deaths since 1904. Several hundreds of patients have been treated with an antiserum, made at the Instituto de Alfonso XIII, with very favorable results. Sheep and horse antiserum have given the best results to date, except the experiences with normal beef serum recently reported from Argentina with a death rate of only 1.5 per cent. in the first series of 200 cases and of 11.6 per cent. in a later 172 cases. The average thus was 4.5 per cent.

Village for the Tuberculous.—Sixto urges that a model village be planned for the tuberculous instead of a merely hospital or sanatorium existence. Each family would have its own house, some member of the family serving as the attendant of the tuberculous. He calculates that the expense would be about a third more per bed than in the sanatorium, but the advantages would outweigh this. The tuberculous would take advantage of treatment at an earlier stage if they did not have to be separated from their family.

Berliner klinische Wochenschrift, Berlin

Sept. 29, 1919, **56**, No. 39

Silver Salvarsan Sodium. Bruhns and Löwenberg.—p. 913. Cont'd.
*The Biology of Lymphocytes. S. Bergel.—p. 915.
Artificial Arm after High Amputation. R. Zuelzer.—p. 919.
War Diet in Relation to Rachitis. A. Japha.—p. 921.
Flour from Lupine Seeds. A. Alker.—p. 923.

The Biology of Lymphocytes.—As the result of his experiments on guinea-pigs and rabbits, Bergel has reached, in regard to the classification of lymphocytes, certain conclusions that are at variance with the doctrines of Ehrlich. The investigations of Ehrlich brought him to the conclusion that the polymorphonuclear, neutrophil leukocytes and the mononuclear, basophil lymphocytes were, by reason of their different morphology, genesis and staining characteristics, to be regarded as distinct cell types. Bergel had shown previously that the lymphocytes contain a fat-splitting ferment. This finding strengthened Ehrlich's conception of two distinct cell types, as it gave proof of a functional difference. The knowledge of the presence of the ferment made it easier to understand biologically and clinically the lymphocytosis regularly observed in many conditions; for example, it explained the increase in the lymphocyte count brought about by a diet rich in fat, and also the part the lymph nodes play in the assimilation of fats. On the other hand, Bergel finds that the lymphocytes should be viewed more comprehensively than Ehrlich viewed them; that is, Bergel would classify functionally as lymphocytes the mononuclear cells and also the transitional forms that are characterized by a crescent-shaped (but never polymorphous) nucleus and by a non-granular basophil protoplasm, for the reason that such cells may develop from or into typical lymphocytes. Bergel claims to have shown that also the small lymphocytes have ameboid motility and phagocytic power for fats. He thinks he has proved by means of oil and lipoid injections that these substances exert an elective chemotactic influence on the lymphocytes within the vessels and attract vastly more mononuclear lymphocytes than polymorphonuclear leukocytes. The lymphocytes thus migrate out of the vessels, seize the fat globules with ameboid protoplasmic processes, and digest them or pass them on to the lymph nodes and the spleen.

Correspondenz-Blatt für Schweizer Aerzte, Basel

Dec. 11, 1919, **49**, No. 50

*Influence of Ovaries on Glycemia. C. Baillod.—p. 1897.
*Blood-Platelet Extract by the Mouth. W. Jost.—p. 1909.

Influence of Ovaries on Sugar Content of Blood.—Baillod concludes from his clinical and experimental research that whereas injection of epinephrin in physiologic conditions raises the sugar content of the blood to a certain extent, this reaction is more intense and occurs more rapidly in the absence of ovarian functioning.

Action of Blood-Platelet Extract by the Mouth.—Jost reports that the blood platelet extract known as coagulen is absorbed by the digestive tract. Given by the mouth, it aids materially in shortening coagulation time. It thus helps to combat a tendency to hemorrhage, but in urgent cases the subcutaneous and intravenous routes should be used at the same time.

Deutsche Zeitschrift für Chirurgie, Leipzig

January, 1919, **148**, No. 1-2

*Pathogenesis of Steeple Skull. A. Rieping.—p. 1.
Incarcerated Hernia. J. Dubs.—p. 52.
Abnormally Large Foramina in the Skull. R. Pamperl.—p. 91.
Access to Projectile in Front of Second Cervical Vertebra. Remmets.—p. 111.
*U Clamps for Fractures. Remmets.—p. 118.
*Isolated Fracture of Acetabulum. Kreglinger.—p. 129.

Pathogenesis of Steeple-Skull.—Rieping gives an illustrated description of an infant born with extreme oxycephaly. The details of twenty-one particularly pronounced cases of steeple-skull from the records are tabulated, and the possibility of various methods of operative intervention is discussed. His case confirms that oxycephaly is the result of a displacement of the primary ossification center of the frontal and parietal bones toward the coronary suture. This entails the premature growing together of the latter. It may be inherited, with other malformations.

Clamps for Fracture.—Remmets' clamps are shaped like a very broad U, the pointed tips triangular to ensure a perfect hold. The ends of the bone are held in place with forceps like veterinarians' hoof-tongs, the handle resting on the table, and the clamp is driven in with a holder and hammer. The limb can be moved cautiously from the very first, and only a light dressing is required. The staple can be applied through a small incision in the skin. He has used these staples in twenty-seven cases, some of which are illustrated to show the fine results realized.

Fracture of the Acetabulum.—Kreglinger's experiences testify that with early diagnosis and proper treatment the outlook is favorable for permanent healing without special deformity.

Münchener medizinische Wochenschrift, Munich

Sept. 12, 1919, **66**, No. 37

Composition of the Blood in Arid Climates. Grober.—p. 1043.
*Devitalized Tissue and Gas Gangrene. S. Weil.—p. 1046.
Serologic Reactions in Syphilis and Carcinoma. E. Fränkel—p. 1047.
*The Colloidal Gold Reaction. H. Eicke.—p. 1049.
Best Technic for Sending Specimens for Early Diagnosis of Syphilis. E. Hofmann.—p. 1050.
Terminology for Various Types of Bacteria Carriers. H. Dold.—p. 1052.
Treatment of Acute Appendicitis. A. Krecke.—p. 1052.
Splint for Fractured Femur. A. Nussbaum.—p. 1056.
Pathologic Bone Conditions from Undernutrition. F. Eisler.—p. 1057.
Chemotherapy in Trichophytosis. K. Taege.—p. 1058.

Composition of the Blood in Arid Climates.—At the congress of German internists, held in 1911, the supposed beneficial effect of arid climates on renal and respiratory diseases was discussed. The supporters of the view that a dry climate is beneficial based their belief on the assumption that in arid climates the increased secretion by the sweat glands and the kidneys brought about an increased excretion of waste material. For this reason, they argued, an accumulation of urinary constituents in the blood—enough to induce uremia—could not take place. This made it desirable to study the blood in arid climates. Grober was chosen for a three months' study of the question, and on the advice of expert geographers southern Tunis in northern Africa was selected for his investigations. Belad el Djerid, or the date palm country, the latitude of which is 34 north, was the exact spot chosen. To the south lies the Sahara Desert; to the north, extensive salt marshes, dry in summer. The mean winter temperature is 12 C. (53.6 F.) the summer temperature ranges usually between 30 and 40 C. (86 and 104 F.), the maximal temperature being, however, above 50 C. (122 F.). The minimal temperature is slightly below freezing. It hardly ever rains, and even cloudy days are rare. Rain is often absorbed by the dry atmosphere before it reaches the earth. Through government aid (the country is a French protectorate), religious and superstitious scruples were overcome and 200 subjects were secured. Many were rejected because of intestinal parasites, malaria and syphilis. The records of only seventy-nine of the healthiest subjects were taken. The primitive inhabitants, the Berbers, and Arabians were selected in preference to others, as they had been exposed longest to the climatic conditions. No peculiar difference in form or staining characteristics of the red and white blood corpuscles were noted. Blood specimens had to be from finger pricks, other means being prohibited on religious grounds. The average results of the blood tests were: erythrocytes, 6,300,000; hemoglobin, 99; specific gravity: whole blood, 1.057, blood serum, 1.026; refractometric determination of albumin, 8.5; solids, 22.24 per cent. The red cell count was much higher than among Europeans. Hemoglobin was also slightly increased. The rest of the values are not significant. Grober therefore reaches the conclusion, which he regards as important from chemical, pathologic and physiologic standpoints, that even under extraordinarily low humidity conditions, such as were found in Tunis, the blood preserves its usual composition. The assumption that in arid climates there is an increased excretion from the blood of urinary constituents by way of the sweat glands is therefore refuted. This does away then, he thinks, with the supposed indications for sending kidney patients to arid climates.

The Significance of Devitalized Tissue in Gas Gangrene.—Weil found that a small fraction of the ordinary lethal dose suffices to cause the death of guinea-pigs when the causative agent of gas gangrene is introduced into crushed or torn muscle tissue, whereas in healthy tissue the growth of the causative agent is checked at once. This proves that healthy tissue has a marked defense reaction that is lacking in damaged tissue. The conclusion would therefore seem justifiable that a slight gas gangrene infection in a crushed or lacerated war wound would develop rapidly and practically unhampered. The spread of the infection does not depend alone on the number of gas bacilli but also on their virulence, or ability to form toxins. The virulence of the bacillus may be an inherent quality of a given strain before entering a wound, or the high virulence may be developed within a wound, owing to the presence of torn tissue. The pathologic-anatomic picture of the infection produced by the Fraenkel strain was practically the same in animals whether the causative agent was introduced in torn or in healthy tissue. It was found that the bacillus of malignant edema could cause edema and also be a gas producer, which verifies clinical experience. Weil's experiments, furthermore, proved conclusively that gas gangrene serums have slight or no protective value if the seat of the gas infection is in devitalized tissue, and that serotherapy must be supplemented by surgical measures if gas gangrene is to be avoided or combated.

Clinical Importance of the Colloidal Gold Reaction.—The main difficulty with the colloidal gold reaction, Eicke finds, is the preparation of the colloidal gold. The trouble lies in the extreme sensitiveness of colloidal gold to chemical influences; even the alkalinity of the glass may give the solution a bluish tinge and render it useless from the start. Another frequent cause of failure is that fresh, doubly distilled water is not used. The colloidal gold reaction furnishes an interesting proof of the baneful effect of exceedingly slight impurities in water. The main value of the colloidal gold reaction is that it gives us a means for the early diagnosis of neurosyphilis. At the Rudolf Virchow Hospital, Berlin, it has established the syphilitic origin in many obscure cases. In one case of optic neuritis, the etiology was baffling. The personal and family history was negative. The blood Wassermann test was negative, but the colloidal gold reaction gave the typical curve of cerebrospinal syphilis. The patient, who was seriously ill, was at once given specific treatment with good results. If it should prove possible to simplify the preparation of the colloidal gold, this reaction might be regarded as ideal and would be of the greatest value to medicine.

Wiener klinische Wochenschrift, Vienna

Nov. 6, 1919, **32**, No. 45

*The Peripheral Arteries in Cardiac Insufficiency. Wiesel and Löwy.—p. 1033.
Vessel Changes in Influenza. O. Stoerk and E. Epstein.—p. 1086.
Hexamethylenamin by the Vein in Acute Arthritis. F. Deutsch.—p. 1086.
Subcutaneous Injection of Nucleins. P. Habetin.—p. 1091.
*Old Irreducible Hernias. L. Schönbauer.—p. 1093.

Pathology of the Peripheral Arteries in Acute and Chronic Cardiac Insufficiency.—Wiesel has long asserted that many of the clinical symptoms which are commonly ascribed to failure of the heart muscle, or traced to nervous, vasomotor influences, have in reality their origin in pathologic changes in the peripheral or outer arteries. The clinical symptoms in impaired circulation frequently could not be explained by postmortem anatomic findings. Often in serious cases the heart was found practically unimpaired. On the other hand, postmortems of elderly persons had revealed that chronic disturbances of circulation do not always accompany atrophic hearts. Wiesel and Löwy admit that anatomic findings alone do not suffice to give an absolutely clear picture of the causes of disturbed circulatory function, but they think their findings in twenty cases that came to necropsy may form a basis for further research. Arteries from various parts of the organism were examined histologically, and the findings showed pathologic conditions in at least all the chronic cases of impaired circulation. The degree to which the circulation was impaired also corresponded in a general way to the various stages in the disease of the arteries. The disease affects primarily the middle coat and spreads later to the elastic coat, the intima being rarely invaded. This is the main feature differentiating the disease from arteriosclerosis; nor were atheromatous patches found in the media, such as are found in the intima in atherosclerosis. The process that Wiesel and Löwy describe is purely degenerative and not inflammatory. The starting point may possibly be the vasa vasorum, of which they found some indications. Recovery is not excluded, but they regard the changes within the vessel walls as ordinarily permanent. They characterize the various stages of the degenerative process as follows: (1) foci of edematous infiltration in the tunica media; (2) separation of the muscular fibers so that they present a ragged appearance; (3) along with changes in the nuclei, muscular degeneration, evidently the result of faulty nutrition; (4) formation of necrotic foci; (5) restorative processes: muscle formation, atypical fiber layers, long muscular fibers in annular muscle; (6) evidences of cicatrization and calcareous infiltration in the tunica media.

Irreducible Hernias of Long Standing.—Schönbauer says that the main difficulty and the chief danger that is encountered in any attempt to reduce by a radical operation a large hernia of long standing is that during the course of time the abdominal space has become much retracted, so that there is no longer room for the intestine. If by dint of much work the hernia is reduced, serious abdominal distention is likely to follow, which will frequently result in the diaphragm being pushed upward, possibly to the third rib. This condition may have fatal consequences. If reduction of the hernia is extremely difficult, he thinks it is better to resect a portion of the intestine, up to three meters. If this is not done and incarceration results, it may be necessary to remove an even greater portion. He describes two fatal cases; the hernias were of twelve and thirty years' standing. Death occurred from crowding of the lungs in one case, plus incipient peritonitis in the other.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Oct. 11, 1919, **2**, No. 15

*Raying after Cancer Operations. P. M. van der Haer.—p. 1058.
*Pituitary Diabetes. J. Koopman.—p. 1071.
*Case of Gastric Syphilis. W. F. Suermondt.—p. 1076.

Postoperative Raying.—Van der Haer relates that there has been recurrence in only one of his twenty cases of mammary cancer in which the site of the cancer was exposed to the roentgen rays after its removal. In twelve the interval since has been three years and in all it has been over two years.

Organotherapy in Diabetes.—Among the arguments in favor of the assumption that more than one endocrine organ may be involved in the production of diabetes, Koopman mentions that the suprarenals have sometimes been found diseased in diabetes; that the reaction to phlorizin is often exceptionally severe in exophthalmic goiter, suggesting involvement of the thyroid; that this excessive reaction is not observed after partial thyroidectomy, and that the tolerance for carbohydrates is abnormally low with exophthalmic goiter. Müller has reported a case of the latter given thyroid treatment; sugar appeared then in the urine and the patient died in diabetic coma. Such facts suggest some participation of the thyroid in the etiology of diabetes. The pituitary also may be involved. Diabetes has been observed in 40 per cent. of the cases of acromegaly, but acidosis and coma are extremely rare in such cases. Steiger could find only five cases in his compilation in 1917. In one of Stadelmann's two cases, after death in coma, the pituitary was found diseased but the pancreas was apparently sound. In Steensma's case, the girl had diabetes and a tendency to obesity; radiography showed abnormal conditions in the sella turcica; carbohydrates could not be tolerated, but pituitary treatment gave good results.

Koopman has encountered two cases of pituitary diabetes which he describes in detail, calling attention to the absolute intolerance of albumin in both. The first patient, a man of 40, had no glycosuria after 100 gm. of bread, but after 50 gm. bread and 50 gm. meat there were 38.6 gm. sugar, and after 100 gm. bread and 50 gm. meat, 69.2 gm. sugar. The roentgen findings in the pituitary region were normal and the Wassermann reaction negative. But after three days of tentative pituitary treatment, no sugar appeared in the urine after ingestion of 200 gm. bread and 50 gm. meat, and even when this meat ration was doubled, only 16.4 gm. sugar was found in the urine The patient during a whole year presented glycosuria whenever the meat ration was increased, while carbohydrates did not increase the sugar content. Whenever the pituitary treatment was interrupted, sugar appeared in the urine by the second day. Acetone and diacetic acid were never observed after the very first. The second patient presented much the same picture, but radioscopy was not available. The glycosuria was brought under control with pituitary treatment but the man wearied of it in two months and of the restriction of meat, and dropped the whole, dying three months later in coma. In conclusion Koopman extols the Allen fasting treatment of diabetes as probably destined to be "the" treatment, and points out that a trial of this may aid in the differentiation of this pituitary form of diabetes. In any event, the trial can do no harm. The classic method of estimating the tolerance does not give an insight into the metabolism in diabetes; the sugar content of the blood is more instructive than that of the urine. If a special susceptibility to albumin is discovered, the pituitary should be thought of.

Syphilis of the Stomach.—In Suermondt's case there was nothing to suggest syphilis in the woman of 47 who had had stomach symptoms for seven years, ascribed to ulcer: local pain, worse at night, and occasional vomiting, but no blood in vomit or stools. After a few mouthfuls she always felt as if the stomach was full. The roentgen findings were interpreted as plastic linitis, but the operation revealed syphilitic changes in the small contracted stomach and in the liver. Under specific treatment the outline of the stomach grew larger and there was no further vomiting. Six roentgenograms taken at intervals during the six months show the characteristic findings before and after treatment.

Ugeskrift for Læger, Copenhagen

Aug 21, 1919, **81**, No. 34

Surgical Treatment of Chronic Gastric and Duodenal Ulcer. Pers.—p. 1343.
Noguchi's Leptospira in Etiology of Yellow Fever. V. Jensen.—p. 1355.
Case of Gonorrheal Phlebitis. H. Boas.—p. 1358.